AY485973 Triticum Continuation (92 o AP005307 Oryza sat AY082965 Hordeum y AK109732 Oryza sat Continuation (216 AC079874 Oryza sat AE017119 Oryza sat AY485974 Triticum AX505570 Sequence BT002107 Arabidops

AY140103 Arabidops AY089729 Arabidops AY089130 Arabidops AC007266 Arabidops AC006585 Arabidops AY082960 Hordeum v AY082961 Hordeum v

Scoring table:

Searched:

Minimum DB Maximum DB

••

Database

Perfect score:

Sequence:

OM nucleic

Run on:

ALGOGG27 Oryza sat AK100097 Oryza sat AK058536 Oryza sat

Continuation (249

Continuation (265 AP003579 Oryza sat AK121024 Oryza sat

```
gene="VRN2"
note="contains CCT domain similar to Arabidopsis constant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AY485965 BEN 17-MAR-2004
Iriticum monococcum cultivar P1272561 ZCCT1 (VRN2) mRNA, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae,
Pooideae, Triticeae, Triticum.

    (bases 1 to 850)

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Yan, L. Loukolanov, A., Blechl, A., Tranquilli, G., Ramakrishna, W., San, L., Loukolanov, A., Blechl, A., Tranquilli, G., Ramakrishna, W., SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J. Direct Submission
Submitted (20-NOV-2003) Agronomy and Range Science, University of California, One Shields Avenue, Davis, CA 95616, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Yan,L., Loukoianov,A., Blechl,A., Tranquilli,G., Ramakrishna,W., SanMiguel,P., Bennetzen,J.L., Echenique,V. and Dubcovsky,J. The Wheat VRN2 Gene Is a Flowering Repressor Down-Regulated by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1. .850
/organism="Triticum monococcum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Science 303 (5664), 1640-1644 (2004)
                            AP008213 091
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                  AP008210
                                                           AY082965
                                                                                                                                                                                                                                                                                                                                                   AK121024
                                                                                                                                                                                                                                                                                                                                                                                                                AK058536
                                                                                                                                                                                                                                                                                                                                   AP003579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db xref="taxon:4568"
                                                                                                                                         AY485974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /mol_type="mRNA"
/cultivar="P1272561"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'note="winter line
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             codon_start=1/product="ZCCT1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AY485965.1 GI:45390685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1. .850
/gene="VRN2"
                                                           Triticum monococcum
Triticum monococcum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 850)
                                                             1258
8.6 110000
3.6 144
                                                                                                        .6 144191
.6 300029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           96. .737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             domains"
                          .3 110000
.3 150554
                                                                                                                                                                                                                                                      103495
                                                                                                                                                                                                                                                                                                   1455
                                                                                                                                                                                                                                                                                                                     110000
                                                                                                                                                                                                                                                                                                                                                               110000
                                                                                                                                                                                                                                                                                                                                   170964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Vernalization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AY485965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AY485965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15016992
                                                        88.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 1
AY485965
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
Hordeum v
Hordeum v
Hordeum v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Continuation (3 of AY485980 Triticum
                                                                                                   February 23, 2006, 11:57:54; Search time 5416 Seconds (without alignments) 10453.486 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Continuation (4 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AY485966 Triticum
AY485968 Triticum
AY485967 Triticum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AY485976 Triticum
AY485979 Triticum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AY485965 Triticum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AY485964 Triticum
AY485963 Triticum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AY485975 Triticum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AY485970 Triticum
AY485971 Triticum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AY485969 Triticum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution.
                                                                                                                                                                                                   1 taactgcctcttcttcc.......tagctactttgatgtgtaat 996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AY687931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AY485978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AY485977
                                                                                                                                                                                                                                                                                                                  11766282
         GenCore version 5.1.7
Copyright (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                                                                                   5883141 seqs, 28421725653 residues
                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AY485644 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AY485644_3
                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                        - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AY687931
AY485970
AY485971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AY485965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AY485977
                                                                                                                                                                                                                                  IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                seq length: 0
seq length: 200000000
                                                                                                                                                                     US-10-723-947-75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gb_ba:*.
gb_in:*
gb_env:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gb_ov: *
gb_pat: *
gb_pr: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gb_vi:*
gb_htg:*
gb_pl:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gb_sy:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sts:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ro:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .:
E0
                                                                                                                                                                                                                                                                                                                                                                                                                                                            GenEmbl:*
```

DESI AVAILABLE CATE

846.8 830.8 830.8

561 464.4 464.4 320.8 267.2 251.4 247.6 206.4

Score

Result 8

```
al Similarity
849; Conserv
                                                    AY485966
AY485966.1
                                                                                                                                                                                                 15016992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S:
Matches 849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            254
                                                   ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
 RESULT 2
AY485966
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                    source
                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
/protein_id="AAS60237.1"
/db_xref="G1:45390686"
/db_xref="G1:45390686"
/translation="MSMSCGLCGANNCPRLMVSPIHHHHHHUGEHQLCEYQFFAHGNHHHHHHHHGSADYPVPPPPDFMSPHTWTRPFHETAAAGNSRLTLEVGAGGGHMAHLVQPPPPPHGGAATWTISNENTMTIOTEMWVGPAHYPTMOGRAAXWMRYRERRKRRRYDKQIRYESRKAYAELRPRVNGRFVKVPEAMASPSSPASPYDPSKLHLGWFR"
                                                                                                       ö
                                                                                                                                                                                      120
                                                                                                                                                                                                          193
                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                            313
                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                        360
                                                                                                                                                                                                                                                                                                                                                                             433
                                                                                                                                                                                                                                                                                                                                                                                        493
                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  099
                                                                                                                                                                   133
                                                                                                                                                                                                                                                   253
                                                                                                                                                                                                                                                                                                                                     373
                                                                                                                                                                                                                                                                                                                                                                                                                                                              553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            661 CCGAAGCCATGGCATCGCCATCATCTCCAGCTTCGCCCTATGATCTTAGTAAACTTCACC 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             840
                                                                                                                                             9
                                                                                                                          73
                                                                                                                                                                                                          GGGCCAACAACTGCCCGGGCCTCATGGTCTCGCCCATTCACCATCATCACCATCATC
                                                                                                                                                                                                                                                              ATGCCTCGGCAGCAGCAGCTACCCCAGTGCCACCACCAGCAAAATTCGACCACGCGGAAAA
                                                                                                                                                                                                                                                                                                                                                  CATGGACCAGACCATTTCATGAAACAGCAGGGAAGGAACAGCAGCAGCTCACGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                 TCGTGCCATTTCACGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTA
                                                                                                                                      AAACAAGCAAACCTTGGAGCTAGCTAGCAGTATGTCCATGTCATGCGGGTTTGTGCG
                                                                                                                                                                             AGGTGGGCGCCGACCACATGGCTCACCTAGTGCAGCCACCGGCAAGAGCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                      TCGTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCGGATGCTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAACATATTTCCTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTCTTCCTCGACGTCTCTCCTCGTCGCTCCTCCACGCACCAGACCACACAGAAAAAAC
                                                                                                                                                                                                                                                                                            ATGGCTCGGCAGCAGACTACCCAGTGCCACCGCCGCAGACAACTTCGACCACCCGCAGAA
                                                                                                                                                                                                                                                                                                                                     CATGGACCAGACCATTTCATGAAACAGCGGCAGGGAACAGCAGCAGGCTCACGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGTGATGAGGTATAGGGAGGAAGAGGGGGGGGGCGTATGACAAGCAAATCCGATACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541 AGGTGATGAGGTATAGGGAGAAGAGGAGGCGCCGCTATGACAAGCAAATCCGATACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGTCCAGAAAAGCTTACGCTGAGCTTCGGCCACGGGTCAACGGCCGCTTTGTCAAGGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCGGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAACATATTTCCTTCTG
                                                                                                                                                                                                                                                   AGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCGAAGCCATGGCATCGCCATCTCCCAGCTTCGCCCTATGATCCTAGTAACTTCACC
                                                                                                       Gaps
                                                                                                      ,
0
                                                                                Score 848.4; DB 15; Length 850;
Pred. No. 1.7e-220;
0; Mismatches 1; Indels 0;
                                                                                 85.2%;
                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATTGGAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                     Matches 849;
                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                   74
                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                       181
                                                                                 Query Match
Best Local S
                                                                                                                         14
                                                                                                                                                                                                           134
                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                             374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                614
                                                                                                                                                                                                                                                   194
                                                                                                                                                                                                                                                                                           254
                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                     434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                     314
                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                              494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 854
                                                            ORIGIN
                                                                                                                                            g
                                                                                                                         ò
                                                                                                                                                                ò
                                                                                                                                                                                 셤
                                                                                                                                                                                                                          요.
                                                                                                                                                                                                                                                                   ď
                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

```
/procedin_id="AASe0238.1"
/db_xref="GI:45390691"
/translation="WBMSCGLCGANNCPRLMVSPIHHHHHHDEHQLCEYQFFAHGNH
HHHHGSAADYPVPPPDHRRTWTRPFHETAAAGNSSRLTLEVGAGGGHMAHLVQ
PPARAHIVPFHGGAPTYPISNEAIMTIDTEMWVGPAHYPTMQERAKYMRYREKRKR
RYDKQIRYESRKAYAELRPRVNGRFVKVPEAMASPSSPASPYDPSKLHLGWFR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="VRN2"
96=.737
/gene="VRN2"
/hote="contains CCT domain similar to Arabidopsis constant
AY485966 BSO bp mRNA linear PLN 17-MAR-2004
Triticum monococcum cultivar PI573529 ZCCT1 (VRN2) mRNA, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                     Bukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae, Pooleae, Triticeae, Triticae, Triticum.

    (bases 1 to 850)

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      73
                                                                                                                                                                                                                                                        Yan, L., Loukoianov, A., Blechl, A., Tranquilli, G., Ramakrishna, W. SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J. The Wheat VRN2 Gene Is a Flowering Repressor Down-Regulated by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGGCTCGGCAGAGACTACCCAGTGCCACCGCCGCCAGACACTTCGACCACGGCAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ramakrishna, W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAACAAGCAAGCAAACCTTGGAGCTAGCTAGCAGTATGTCCATGTCATGCGGTTTGTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCGCCAACAACTGCCCGCGCCTCATGGTCTCGCCCATTCACCATCATCATCATCATCATCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCGCCAACAACTGCCCGCGCCTCATGGTCTCGCCCATTCACCATCATCATCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                Dubcovsky, J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      850;
                                                                                                                                                                                                                                                                                                                                                                                                   Yan, L., Loukcianov, A., Blechl, A., Tranquilli, G., Ram, SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcon Direct Submission
Submitted (20-NOV-2003) Agronomy and Range Science, I California, One Shields Avenue, Davis, CA 95616, USA Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 848.4; DB 15;
Pred. No. 1.7e-220;
0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Triticum monococcum"
                                                                                                                                                                                                                                                                                                                         Vernalization
Science 303 (5664), 1640-1644 (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /db xref="taxon:4568"
/note="winter line"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /mol_type="mRNA"
/cultivar="PI573529"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
/product="ZCCT1"
                                                                                       GI:45390690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   85.2%;
ilarity 99.9%;
Conservative
                                                                                                                           Triticum monococcum
Triticum monococcum
                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 850)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 domains"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1. .850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .850
```

ö

180

133

.09

240

373

433

493

613

553

999

720

780 793

673

d

g ઠે d ò q ò g g

ò ద ò g

ò

셤

ò

a

ò

ò

```
/trānslation="MSMSCGLCGANNCPRLMVSPIHHHHHHHBHQEHQLCEYQFFAHGNH
HHHHIGSADYPVPPPDDNFDHRRYWYRPFHFTAAAGNSSEALTLLEWGAGQHMAHLVQ
PPARAHIVPFHGGAFTHTISNEALMTIDTEMWVGPAHYFTMQERAAKVMGYREKRRR
RYDKQIRYESRKAYRELRPRVMGRFVKVPEAMASPSSPASPYDPSKKHLHGWFR
                                                             'gene="VRN2"
'note="contains CCT domain similar to Arabidopsis constant
                                                                                                                                                                                                                                                                                                                                                                                                                 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGGCTCGGCAGCAGCTACCCAGTGCCACCGCCGCCAGACACTTCGACCACCGCAGAA 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATGGACCAGACCATTTCATGAAACAGCGGCAGGGAACAGCAGCACAGGCTCACGCTGG 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCGAAGCCATGGCATCATCTCCAGCTTCGCCCTATGATCCTAGTAAACTTCACC 733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATGGACCACACTTTCATGAAACAGCAGCGGCAGGGAACAGCAGCAGCTCACGCTCG
                                                                                                                                                                                                                                                                                                                                                                 TCGTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTAC
                                                                                                                                                                                                                                                                                                                                                                                                  74 AAACAAGCAAGCAAACCTTGGAGCTAGCTAGCAGTATGTCCATGTCATGCGGTTTGTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCGCCAACAACTGCCCGCGCCTCATGGTCTCGCCCATTCACCATCATCATCACCATCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGGTGGCCGCAGGCCAACACATGGCTCACCTAGTGCAGCCACCGGCAAGAGCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361 AGGTGGGCGCAGGCGGCCAACACATGGCTCACCTAGTGCAGCCACCGGCAAGAGCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGTGATGAGGTATAGGGAGAAGAGGAGAAGAGCGGCGCTATGACAAGCAAATCCGATACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCGGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAACATATTTCCTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCGGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAACATATTCCTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCGTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTGACACAGAGATGATGGTGGGGCCTGCCCATTATCCCACAATGCAGGAGAGCAGCGA
                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                      850;
                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                      1; Indels
                                                                                                                                                                                                                                                                      15;
                                                                                                                                                                                                                                                                   Score 848.4; DB 15
Pred. No. 1.7e-220;
0; Mismatches 1;
                                                                                                                                     /protein_id="AAS60240.1"
/db_xref="GI:45390701"
note="winter line"
                                                                                                                        product="ZCCT1"
                                                                                          domains"
/codon_start=1
                                                                                                                                                                                                                                                                   85.2%;
                             gene="VRN2"
                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                    al Similarity
849; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          254
                                                                                                                                                                                                                                                                                                                                                                                                                                19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                      Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                     14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          721
                                                                                                                                                                                                                                                                                                    Matches
                gene
                                            CDS
                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                               원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AY485968 850 bp mRNA linear PLN 17-MAR-2004
Triticum monococcum cultivar PI355532 ZCCT1 (VRN2) mRNA, complete
                                                                                                                                                         480
                             360
                                                             433
                                                                                          420
                                                                                                                          493
                                                                                                                                                                                       553
                                                                                                                                                                                                                      540
                                                                                                                                                                                                                                                    613
                                                                                                                                                                                                                                                                                     600
                                                                                                                                                                                                                                                                                                                     673
                                                                                                                                                                                                                                                                                                                                                    99
                                                                                                                                                                                                                                                                                                                                                                                    733
                                                                                                                                                                                                                                                                                                                                                                                                                 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                 793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae, Pooideae, Triticeae, Triticam.
(Dases 1 to 850)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Yan, L., Loukolanov, A., Blechl, A., Tranquilli, G., Ramakrishna, W., SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J. Direct Submission
Submitted (2000-2003) Agronomy and Range Science, University of California, One Shields Avenue, Davis, CA 95616, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Yan,L., Loukolanov,A., Blechl,A., Tranquilli,G., Ramakrishna,W. SanMiquel,P., Bennetzen,J.L., Echenique,V. and Dubcovsky,J. The Wheat VRNZ Gene Is a Flowering Repressor Down-Regulated by Vernalization
                301 CATGGACCAGTTTCATGAAACAGCAGCGGGAGGGAACAGCAGCAGGCTCACGCTGG
                                                                             AGGTGGGCGCAGCCGACCAACACATGCCTCACCTAGTGCAGCCACCGGCAAGAGCCCACA
                                                                                                                                            TCGTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTA
                                                                                                                                                                                                                                                                               CCGAAGCCATGGCATCGCATCATCTCCAGCTTCGCCCTATGATCATAGTAAACTTCACC
                                                                                                                          TCGTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTA
                                                                                                                                                                                       TTGACACAGAGATGATGGTGGGGCCTGCCCATTATCCCACAATGCAGGAGAGAGCAGGA
                                                                                                                                                                                                           TTGACACAGAGATGATGATGGGGGCCTGCCCATTATCCCACAATGCAGGAGAGAGCAGCGGA
                                                                                                                                                                                                                                                      AGGTGATGAGGTATAGGGAGAAGAGGAAGAGGCGGCGCTATGACAAGCAAATCCGATACG
                                                                                                                                                                                                                                                                                                                     AGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTAC
                                                                                                                                                                                                                                                                                                                                                                                    CCGAAGCCATGGCATCGCCATCTCCCAGCTTCGCCCTATGATCCTAGTAAACTTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCGGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAAATGATAACATATTTCCTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               reggargerrecegraarrraeacacaagecagaraaargaraacararrrecrrere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGTGGGCGCCAGCCCAACACATGGCTCACCTAGTGCAGCCACCGGCAAGAGCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1. .850
/organism="Triticum monococcum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Science 303 (5664), 1640-1644 (2004)
15016992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /mol_type="mRNA"
/cultivar="PI355532"
/db_xref="taxon:4568"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AY485968.1 GI:45390700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Triticum monococcum
Triticum monococcum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 850)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATTGGAGCC 863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AY485968
                                                           374
                                                                                         361
                                                                                                                       434
                                                                                                                                                      421
                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                    554
                                                                                                                                                                                     494
                                                                                                                                                                                                                                                                                     541
                                                                                                                                                                                                                                                                                                                     614
                                                                                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                                                                                                                  674
                                                                                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                 734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 3
AY485968
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
```

CCGTTAGTGATTGATC 853	 GATC		17	JRN2) mRNA, complete	ophyta, Tracheophyta;	les; Poaceae; 3., Ramakrishna,W.,	i Dubcovsky,J. Jown-Regulated by	3., Ramakrishna,W., Buhanyaky.I.	lence, University of 16, USA		<i>δ</i>	qa	o Arabidopsis constant	RESULT 5		-	Length 850; . Saps 0; Gaps 0;	_	ACCACACCAGAAAAAAC 73				
Oy 794 ATTGATCCACCGTGAAGCAGTTGTTCTCTCAAGTAAATAAG	781	Oy 854 GATTGGAGCC 863 	RESULT 4 AY485967 LOCUS AY485967 850 bp mRNA linear PLN COUSTAINS AY485967	N Z	KEYWORDS SOURCE Triticum monococcum ORGANISM Triticum monococcum Eukaryota; Viridiplantae; Streptophyta; Embry	Spermatophyta, Magnoliophyta, Liliopsida, Poales; Poaceae; Pooldeae; Triticeae; Triticum. REFERENCE 1 (bases 1 to 850) AUTHORS Yan, L., Loukoianov, A., Blechl, A., Tranquilli, G., Ramakrish	SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J TITLE The Wheat VRN2 Gene Is a Flowering Repressor Down-Regulate Vernalization 1640-1644 (2004)	PUBMED 15016992 REFERENCE 2 (bases 1 to 850) AUTHORS Yan,L., Loukoianov,A., Blechl,A., Tranquilli,	TITLE Direct Submission JOURNAL Submitted (20-NOV-2003) Agronomy and Range Science, University California, One Shields Avenue, Davis, CA 95616, USA	rce	ਹੈ, \ ਰੀ ਹੈ, \	gene 1850 /gene="VRN2" cns 96 737	, ~ ~ 0	/codon_start=1 /product="ZCCT1" /protein_id="AAS60239.1" /ab. woof=117.4c00000061	/ dd. xrei="d1:45.590696" / translation="MSMSCGLCGANNCPRLMVSPIHHHHHHQKHQLCEYQFFAHGNH HHHHHGSAADYPVPPPDNFDHRRTWTRPFHETAAAGNSRLTLEKGAGGQHMAHLVQ DDaaaHTVDFHCGAEFMTHTRNFWRMVGDAHYDPMVRRRPKRKRRR	RYDKQIRYESRKAYAELRPRVNGRFVKVPEAMASPS ORIGIN	Query Match 85.0%; Score 846.8; DB 15; L Best Local Similarity 99.8%; Pred. No. 4.7e-220; Matches 848; Conservative 0; Mismatches 2; In		OY 14 TICTICCEGAGGTCTCTCCTCGGCTCCTCCACGGCCCCAGAGCACCAGAAAAACCD TICTICCTCGAGAACCGCCCCCCCGGCTCCTCGGCTCCTCCACGACACCACCAGAAAAACCCACCACACACCACCAGAAAAAA	1 2 2	14 1 74 61	14 1 74 61 134	14 74 74 134

, by cy by cy by cy

733 717 853

793

```
/trinslation="MSMSCGLCGANNCPRLMVSPIHHHHHHHGEHQLCBYQFPAHGNH
HHHHGSADDYPVPPPPDNPDHRXTWRPFHETAAGNSSETLEWCAGGGHMAHLVQ
PPARAH VPPYGAPTATISHEA HWIDTEMMVGPAHYPMQERAAKVMRYREKRKR
RYDKQIRYESRKAYAELRPRVNGRFVKVPEAMASPSSPASPYDPSKLHLGWFR"
                                                                                                                                                                                                                                                                                                                                                                                                AY485963 850 bp mRNA linear PLN 17-MAR-2004
Triticum monococcum cultivar PI355522 ZCCT1 (VRN2) mRNA, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="VRN2"
/note="contains CCT domain similar to Arabidopsis constant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae, Pooideae; Triticeae, Triticum.

    (bases 1 to 850)

                                                                                                                                        regargerrecegraartrarageacaageceagaraaaargaraacararrecerere 777
                                                                                                                                                                                                     University of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Yan, L., Loukoianov, A., Blechl, A., Tranquilli, G., Ramakrishna, W., SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J. The Wheat VRNZ Gene Is a Flowering Repressor Down-Regulated by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Yan, L., Loukoianov, A., Blechl, A., Tranquilli, G., Ramakrishna, W., SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J. Direct Submission
Submitted (20-NOV-2003) Agronomy and Range Science, University of California, One Shields Avenue, Davis, CA 95616, USA
Location/Qualifiers
                                                  CCGAAGCCATGGCATCGCCATCTCCCAGCTTCGCCCTATGATCCTAGTAAACTTCACC
                                                                                                                                                                                14 TICTICCTCGACGICICTCCTCCTCGGCTCCTCCACGCACCAGACCACACCAGAAAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                83.4%; Score 830.8; DB 15; Length 850; 98.6%; Pred. No. 1.1e-215; ive 0; Mismatches 12; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'organism="Triticum monococcum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Science 303 (5664), 1640-1644 (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /protein_id="AAS60235.1"
/db_xref="G1:45390676"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'db xref="taxon:4568"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /mol_type="mRNA"
/cultivar="P135522"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'note="winter line'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
/product="ZCCT1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                    AY485963
AY485963.1 GI:45390675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'gene="VRN2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Triticum monococcum
Triticum monococcum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 850)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       domains"
                                                                                                                                                                                                                                                         854 GATTGGAGCC 863
                                                                                                                                                                                                                                                                                                 GATTGGAGCC 847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1. .850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Vernalization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 838; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15016992
                                                                                                                                          718
                                                                                                                                                                                794
                                                                                                                                                                                                                     178
                                                                                                      734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                       RESULT 6
AY485963
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                        유
                                                                                                    δ
                                                                                                                                        셤
                                                                                                                                                                              ઠે
                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                           ò
                            ઠે
                                                                                                                                                                                                                                                                           /note="contains CCT domain similar to Arabidopsis constant domains"
                                                                                                                                                                                                                                                                                                                                                   /protein id="AAS60236.1"
/db_xref="G1:45390681"
/translation="MSWSCGSCGANNCPRLMVSPIHHHHHHQEHQLCEYQFFAHGNH
HHHGSAADYPVPPPPDNRTWTRPFHETAAAGNSSRLTLEVGAGGGHMAHLVQP
PARAHIYDFHGGAFTYNISNBAIMTIDTEMMVGPAHYPTMQERAAKVMRYREKKRRR
YDKQIRYESRKAYAELRPRVNGRFVKVPEAMASPSSPASPYDPSKLHLGWFR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCGCCAACAACAACCACCGCGCCCTCATGGTCTCGCCCATTCACCATCATCATCATCATC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCGCCAACAACTGCCCGCGCCTCATGGTCTCGCCCATTCACCATCATCATCATCATC 193
                            οĘ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAACAAGCAAAGCATGGAGCTAGCTAGCAGTATGTCCATGTCATGCGGGTTTGTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAACAAGCAAACCTTGGAGCTAGCTAGCTATGTCCATGTCCATGTCGGTTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGGCTCGCCAGACTACCCAGTGCCACCGCCGCCAGACACTTCGACCACCGCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCTTCTTCGACGTCTCTCCTCCTCGGCTCCTCCACGCACCAGGACCACCAGAAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGAGCACCAGCTGTGAGTACCAGTTCTTCGCCCATGGCA----ACCACCACCACCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Aresercescasacracecasisceacecescescasacaresecasecaseaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATGGACCAGACCATTTCATGAAACAGCAGCGGCAGGGAACAGCAGCAGCTCACGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATGGACCAGACCATTTCATGAAACAGCAGGGCAGGGAACAGCAGCAGGCTCACGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGTGGGCGCAGGCGGCCAACACATGGCTCACTAGTGCAGCCACCGGCAAGAGCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGGTGGGCGCCAAGACACATGGCTCACCTAGTGCAGCCGCCACCGGCAAGAGCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCGTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rcereccarrrcaceaecerecarrcaceaecererarraecaareaaecaarcareacra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTGACACAGAGATGATGGTGGGGCCTGCCCATTATCCCACAATGCAGGAGAGAGCAGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGTGATGAGGTATAGGGAGGAAGAGAGGGGGGGGGCGTATGACAAGCAAATCCGATACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ж
Э
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 847;
Direct Submission
Submitted (20-NOV-2003) Agronomy and Range Science, I
California, One Shields Avenue, Davis, CA 95616, USA
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 830.8; DB 15;
Pred. No. 1.1e-215;
0; Mismatches 2;
                                                                            1.847
/organism="Triticum monococcum"
/mol_type="mRNA"
/cultivar="PI277133"
                                                                                                                                                      /db xref="taxon:4568"
/note="winter line"
                                                                                                                                                                                                                                                                                                                   codon_start=1
                                                                                                                                                                                                                   gene="VRN2"
                                                                                                                                                                                                                                                         /gene="VRN2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 99.4%;
Matches 845; Conservative
                                                                                                                                                                                                                                     .734
                                                                                                                                                                                                   .847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                554
    TITLE
JOURNAL
                                                                                                                                                                                                   gene
                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DRIGIN
```

ò g ò ద 8 g

요 ઠે

ò

셤 ð ద 8 셤 à g 8 , 염 ò g

ò

ö

ઠે

ò

В ò 셤 ò g δ q ò 뎡. ò 요 ò g ò g ò a a ò a ò 셤 δ g

SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcoveky, J. The Wheat VRN2 Gene Is a Flowering Repressor Down-Regulated by JOURNAL Science 303 (5664), 1640-1644 (2004) REFRENCE 2 (bases to 792) REFRENCE 2 (bases to 792) AUTHORS SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J. TITLE Jureck (20-NOV-2003) Agronomy and Range Science, University of California, One Shields Avenue, Davis, CA 95616, USA Location/Qualifiers Source Jorganism="Triticum monococcum" Anol type="mank" Anol type="mank" Anol type="mank" Anol type="mank" Anol type="mank" Anole="winter line" Anote="winter line" Anote="winter line" Anote="winter line" Anote="winter line" Anote="contains" Anote="	Query Match 77.9%; Score 776; DB 15; Length 792; Best Local Similarity 98.7%; Pred. No. 1.1e-200; Matches 782; Conservative 0; Mismatches 10; Indels 0; Gaps	OY 14 TICTICCAACGICTCTCCTCCTCGCTCCTCCACGCACCAGACCACAGAAAAAC	OY 74 AAACAAGCAAACCTTGGAGCTAGCTAGCAGTATGTCCATGTCATGCGGTTTGTGCG 	Oy 134 GCGCCAACAACTGCCCGCGCCTCATGGTCTCGCCCATTCACCATCATCATCATCATCACCATCATCATCATC	OY 194 AGARCACCAGCTGTGAGTACCAGTTCTTCGCCCATCGCAACCACCACCACCACCACCACCACCACCACCACCACC	OY 254 ATGGCTCGGCAGCAGACTACCCAGTGCCACCGCCGCCAGACAACTTCGACCACGCAGAAA 1	Oy 314 CATGGACCAGACCATTTCATGAAACAGCGGGGGAACAGCAGCAGCAGCAGCTCACGCTGG Db 301 CATGGACCAGACCATTTCATGAAACAGCAGCGCAGGGAACAGCAGCAGCAGCTGGCTG	Oy 434 TCGTGCCATTTCACGGAGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTA
1 TTCTTCCTCGACGTCTCCTCCTCGCCTTCTCCACGCACCAGCAGAAAAAC 60	554 AGGTGATGAGGTATAGGGAGAAGAGGAAGAGGCGCCTATGACAAGCAAATCCGATACG 613 	614 AGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTAC 673	674 CCGAAGCCATGGCATCATCATCATCATCATCATGATCCTAGTAAACTTCACC 733 	734 TCGGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAACATATTTCCTTCTG 793 	794 ATTGATCCACCCGGAAGCAGTTGTTCCTCAAAGTAAAATAAGTCGGTTAGTGATTGAC 	854 GATTGGAGCC 863 841 GATTGGAGCC 850	AY485969 792 bp mRNA linear PLN 17-MAR-2004 ON Trilcum monococcum cultivar G3116 ZCCT1 (VRN2) mRNA, complete cds. N AY485969 AY485969.1 G1:45390705	Triticum monococcum SM Triticum monococcum Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae; Triticae; Triticum. E 1 (bases 1 to 792) S Yan,L., Loukoianov,A., Blechl,A., Tranquilli,G., Ramakrishna,W.,

RESULT 7
AV485969
LOCUS
DEFINITION
ACCESSION
VERSION
VERSION
CETWORDS
SOURCE
ORGANISM

REFERENCE AUTHORS

```
30743 TATTTATTGAAACAAGTCTTGTTATACTACGTGTTGATTTAAACATGTAATTTCAAGAGG 30684
                                                                                                                                             AY485975 712 bp mRNA linear PLN 17-MAR-2004
Triticum monococcum cultivar PI277133 ZCCT2 (VRN2) mRNA, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'note="contains CCT domain similar to Arabidopsis constant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /translation="MSMSCGLCGASDCPHHMISPVLQHQBQHWLREYQFFTQGHHHHH
GAGAADYPPPPPPSANCHHRSWTTPPHETAAARMSSRLTLEYDAGGGMAHLLQPPA
RPRTIVPPCGAAFTSIISNATIWTIDTEMWCGAAHNITMQBREAKWRYREKKRRC
YDKQIRYESRKAYAELRPRVNGCFVKVVPEAAASSSPPASPYDPSKLHLGWFQ"
                                                                                                                                                                                                                                                                                 Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Bogrmatophyta, Bognoliophyta, Liliopsida, Poales, Poaceae, Pooideae, Triticeae, Triticum.
(bosideae, Triticeae, Triticum.
(c) (bases 1 to 712)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60 gcgacrigcccgcacardarcrcgcccgr-----rcrrcagcarcagaacaac 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     111 Acrescriscsceadraccagricricacccaaggccaccaccaccaccaccacgeggg 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      oŧ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Yan, L., Loukcianov, A., Blechl, A., Tranquilli, G., Ramakrishna, W., SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J. Direct Submission
Submitted Colnov-2003) Agronomy and Range Science, University of California, One Shields Avenue, Davis, CA 95616, USA
                                                                                                                                                                                                                                                                                                                                                 Yan, L., Loukoianov A., Blechl, A., Tranquilli, G., Ramakrishna, W., SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J. The Wheat VRN2 Gene Is a Flowering Repressor Down-Regulated by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAAGCAAACCTTGGAGCTAGCTAGCTATATGTCCATGTCATGCGGTTTGTGCGGCGCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GCAATCAAACGTAGGGGCTAGCT-GCAGTATGTCCCATGTCATGCGGTTTGTGCGGGCGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 140 ACAACTGCCCGCGCCTCATGGTCTCGCCCATTCACCATCATCACCATCATCATCAGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      260 CGCCAGCAGCACTACCCAGTGCCACCGCCGCCAGACAACTTCGACCACCGCAGAACATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    200 ACCAGCIGIGIGAGIACCAGITCTICGCCCAIGGCAACCACCACCACCACCATGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 712;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tch 46.6%; Score 464.4; DB 15; al Similarity 81.5%; Pred. No. 1.8e-115; 580; Conservative 0; Mismatches 116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        organism="Triticum monococcum"
                                                                                                                                                                                                                                                                                                                                                                                                                      Science 303 (5664), 1640-1644 (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="ZCCT2"
/protein_id="AAS60247.1"
/db_xref="G1:45390731"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'db_xref="taxon:4568"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /mol_type="mRNA"
/cultivar="PI277133"
                                               30683 ATAGCTACTTTGATGTGTAAT 30663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           note="winter line"
                                                                                                                                                                                                                AY485975.1 GI:45390730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           . .712
gene="VRN2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'gene="VRN2"
                                                                                                                                                                                                                                                 Triticum monococcum
Triticum monococcum
                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 712)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           domains"
                                                                                                                                                                                                                                                                                                                                                                                                    Vernalization
                                                                                                                                                                                              AY485975
                                                                                                                                                                                                                                                                                                                                                                                                                                     15016992
                               916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
                                                                                                                                                                                                              VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                    PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                RESULT 9
                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ontinuation (4 of 5) of AY485644 from base 300001 (AY485644 Triticum monococcum phospha putative transposase, phosphatidylinositol phosph.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             31104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31103 GTGATGAGGTATAGGGAGAGAGAGAAGAGGCGGCGCTATGACAAGCAAATCCGATACGAG 31044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           495
                                                                                                                99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          975
               613
                                 541 AGGTGATGAGGTATAGGGAGAAGAAGGAGGGGGGGGGCGCTATGACAAGCAAATCCGATACG 600
                                                                                673
                                                                                                                                               733
                                                                                                                                                                  CTGAAGCCATGGCGTCGCCATCATCTCCCAGCTTCGCCCTATGATCCCAGTAAACTTCACC 720
                                                                                                                                                                                                                  TCGGATGGTTCCGGTAATTTATAGCACACAGCCAGATAAAATGATAACATATTTCCTTCTG 793
                                                                                                                                                                                                                                675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     855
                                                                                                              601 AGTCCAGAAAAGCTTACGCTGAGCTCCGGCCACGGGTCAACGGCCGCTTTGTCAAAGGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1043 TCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TATTTATTGAAACAAGTCTTGTTATACTACGTGTTGATTTAAACATGTAATTTCAAGAGG
                                                                                                                                             CCGAAGCCATGGCATCGCCATCTCCAGCTTCGCCCTATGATCCTAGTAAACTTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GACACAGAGATGATGGTGGGCCTGCCCATTATCCCACAATGCAGGAGAGAGCAGCGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTGATGAGGTATAGGGAGAGAGAGGAGGGCGCCCTATGACAAGCAAATCCGATACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAAATGATAACATATTTCCTTCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGCCATGGCATCGCCATCATCTCCAGCTTCGCCCTATGATCCTAGTAAACTTCACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                    LOCUS AY485644 Accession AY485644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 110000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0, Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 561; DB 15; I
Pred. No. 1.8e-141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              56.3%; Scc. 100.0%; Pred. No. ... 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     210000
310000
410000
                                                                                                                                                                                                                                                                                                                                                                                                                                                       110000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        438828
                                                                                                                                                                                                                                                                                                                                                                                                                         fragments
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100001
200001
300001
                                                                                                                                                                                                                                                                                                       ATTGATCCACCC 792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 100.
Matches 561; Conservative
                                                                                                                                                                                                                                                                                  ATTGATCCACCC 805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         400001
                                                                                                                                                                                                                                                                                                                                                                                                                                       Begin
                                                                                                                                                                                                                                                                                                                                                                                                                      into 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AY485644<sup>7</sup>4
Continuation <sup>7</sup>4 of 5)
                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence split
                                                                                                                                                                                                                                                                                                                                                                                                                                    Fragment Nan
AY485644 0
AY485644 1
AY485644 2
AY485644 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       856
                                                                                                                                             674
                                                                                                                                                                               661
                                                                                                                                                                                                                734
                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                               794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             31163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 919
                                                                              614
                                                                                                                                                                                                                                                                                                                781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          916
                                                                                                                                                                                                                                                                                                                                                                   RESULT 8
AY485644 3/c
WPCOMMENT
                                        쉱
                                                                             ò
                                                                                                         g
                                                                                                                                             ઠે
                                                                                                                                                                         g
                                                                                                                                                                                                                8
                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
```

constant

Arabidopsis

ţ

139

Gaps

16;

Length

59

199

259

230

290 433 350 493 410

319

```
/protein_id="AAS60248.1"
/db_xref="G1:45390734"
/db_xref="G1:45390734"
/translation="NSMSCGLCGASDCPHHMISPVLQHQEQHWLREYQFFTQGHHHHH HGAAADYPPPPPEANCHHCRSWTTPFHETAAAGNSRLTLEVDAGGQNMAHLLQPPA RPRYTYDPFCGAAFTSTISNATIDMIDTEMWGAAHNLTMQRREAKWRYREKKRRC YDKQIRYESRKARAELRPRVNGCFVKVPEAAASSSPPASPYDPSKLHLGWFQ"
                                                                                                                                                                                                                                                                                                                                                         60 GCGACTGCCCGCACACATGATCTCGCCCGT------TCTTCAGCATCAGGAACAAC 110
                                                                                                                                                                                                                                                                                                                                                                                                         CCAGACCATTTCATGAAACAGCAGCGGCAGGGAACAGCAGCAGGCTCACGCTGGAGGTGG 379
                                                                                                                                                                                                                                                                                                                                                                                       200 ACCAGCTGTGTGAGTACCAGTTCTTCGCCCATGGCAACCACCACCACCACCATGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            171 GGGGGGACTACCCACCGCCACCGCCACCACCAATTGCCACCACTGCAGATCATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            231 CCACACGTTTCATGAAACAGCAGCTGCAGGGAACAGCAGCAGACTCACGCTGCAGGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCGTGCCATTCTGCGGGGCTGCATTCACCAGCACTATTAGCAATGCAACAATCATGACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            531 AGTCCAGAAAAGCTTACGCCGAGCTCAGGCCACGGGTCAATGGCTGCTTTGTCAAGGTAC
                                                                                                                                                                                                                                                                                          1 dcaarcaaacgragggcragcr-gcagrargrccargrcargcggrrargrggggggggaa
                                                                                                                                                                                                                                                                                                                           140 ACAACTGCCCGCGCCTCATGGTCTCGCCCATTCACCATCATCATCACCATCATCAGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGGCAGCAGCACTACCCAGTGCCACCGCCGCCAGACAACTTCGACCACCACGCAGAACATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    380 GCGCAGGCGGCCAACACATGGCTCACCTAGTGCAGCCACCGG-----CAAGAGCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        471 AGGTGATGAGGTACAGGGAGAAGAGGAAGAGGCGGTGCTATGACAAGCAAATCCGCTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCGAAGCCATGGCATCGCCATCATCTCCAGCTTCGCCCTATGATCCTAGTAAACTTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  591 CAGAAGCCGCTGCATCGTCGTCACCCCCAGCTTCGCCCTATGATCCTAGTAAACTTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCGTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGACACAGAGATGATGGTGGGGCCTGCCCATTATCCCACAATGCAGGAGAGAGCAGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             411 Trgaracagagargarggregecreccaraarcreacgargcagagagagagagagaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGTGATGAGGTATAGGGAGAGAAGAGGAGGCGGCGCTATGACAAGCAAATCCGATACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCGGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAACATATT 785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA linear
ZCCT1-Td (VRN2)
                                                                                                                                                                                          Score 464.4; DB 15; Length
Pred. No. 1.8e-115;
0; Mismatches 116; Indels
                                                                                                                                                                                                                                                            GCAAGCAAACCTTGGAGCTAGCTAGCAGTATGTCCATGTCATGCGGT
     CCT domain similar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AX485979 2078 bp
Triticum turgidum cultivar Langdon
cds.
     note="contains
                                 codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GI:45390744
                                                                                                                                                                                            46.6%;
ilarity 81.5%;
Conservative
                     domains"
                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AY485979
AY485979.1
                                                                                                                                                                                                                            580;
                                                                                                                                                                                          Query Match
Best Local S:
Matches 580,
                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                       260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AY485979
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
KEYWORDS
                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                           ଚ
                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                   Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . අ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                             ठ
                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                112 bp mRNA linear PLN 17-MAR-2004
riticum monococcum cultivar P1272561 ZCCT2 (VRN2) mRNA, complete
                                                                                                                                             350
                                                                                                                                                                             493
                                                                                                                                                                                                                                                                         470
                                                                                                                                                                                                                                                                                                                                        530
                                                                                                                                                                                                                                                                                                                                                                                                      590
                  230
                                                  379
                                                               433
                                                                                                                                                                                                             410
                                                                                                                                                                                                                                           553
                                                                                                                                                                                                                                                                                                         613
                                                                                                                                                                                                                                                                                                                                                                        673
                                                                                                                                                                                                                                                                                                                                                                                                                                      733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae,
Pooideae, Triticeae, Triticum.
1 (bases 1 to 712)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Yan, L., Loukolanov, A., Blechl, A., Tranquilli, G., Ramakrishna, W., Sanwiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J. Direct Submission Submitsed (20-NOV-203) Agronomy and Range Science, University of California, One Shields Avenue, Davis, CA 95616, USA
CCAGACCATTTCATGAAACAGCAGCGCAGGGAACAGCAGCAGCTCACGCTGGAGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Yan, L., Loukoianov, A., Blechl, A., Tranquilli, G., Ramakrishna, W. SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J. The Wheat VRN2 Gene Is a Flowering Repressor Down-Regulated by
                                                                                                                                TCGTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTA
                                                                                                                                                                                            380 GCGCAGGCGCCAACACATGGCTCACCTAGTGCAGCCACGG------CAAGAGCCCACA
                                                                                                                                                                                                                                         AGGTGATGAGGTATAGGGAGAAGAAGAAGAGGCGGCGCCTATGACAAGCAAATCCGATACG
                                                                                                                                                                                                                                                                                                                                                                     AGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                      CCGAAGCCATGGCATCGCCATCTCCCAGCTTCGCCCTATGATCCTAGTAACTTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCGGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAACATATT 785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Triticum monococcum"
/mol_type="mRNA"
/cultivar="PI272561"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Science 303 (5664), 1640-1644 (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'db xref="taxon:4568"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'note="winter line"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AY485976.1 GI:45390733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="VRN2"
29. .667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29. .667
/gene="VRN2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Triticum monococcum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 712)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Vernalization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AY485976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AY485976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15016992
                                                                                                                                                                          434
                                                                                                                                                                                                                                                                       411
                                             320
                                                                              231
                                                                                                                                                                                                         351
                                                                                                                                                                                                                                         494
                                                                                                                                                                                                                                                                                                         554
                                                                                                                                                                                                                                                                                                                                                                     614
                                                                                                                                                                                                                                                                                                                                                                                                                                      674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AY485976
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
                                           ઠે
                                                                       g
                                                                                                          ઠે
                                                                                                                                   g
                                                                                                                                                                      ò
                                                                                                                                                                                                    g
                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                  а
                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
```

PLN 17-MAR-2004 gene, complete

590

733 650

470 613 530 673

σ

```
863
                                                                                                                                      Sequence split into 5 fr

Pragment Name Be

AY485644 0 10

AY485644 1 20

AY485644 3 30

AY485644 4 4 40

Continuation (3 of 5) of A
                                                                                                                                                                                                                                                                                                    Similarity
                                                     2071 TTGGAGCC
                            TTGGAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Triticum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AY485980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                916
                            856
                                                                                                                                                                                                                                                                                                                                                                                                                                                               556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       736
                                                                                               RESULT 12
AY485644 2/C
WPCOMMENT
                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           53902
                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 13
AY485980
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
KEYWORDS
                          ð
                                                    g
  셤
                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HHHHPVPLPPANFDHSRTWTTPFHETAAAGNSSRLTLEVGAGGRPMAHLVQPPARAHI
VPFYGGAFTNTISNEAIMTIDTEMMVGPAHYPTWQERAAKVMRYREKRKRRRYDKQIR
YESRKAYAELRPRVNGCFVKVPEAMASPSSPASPYDPSKLHLGWFR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      translation="MSMSCGLCGANNCPRLMVSPIHHRHHHHQEHQLRQHQFFAQGNH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   735
Triticum turgidum
Triticum turgidum
Eukaryota, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Pooldeae; Triticeae; Triticum.
1 (bases 1 to 2078)
                                                                                                                                                                                  Yan, L., Loukoianov, A., Blechl, A., Tranquilli, G., Ramakrishna, W., SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcoveky, J. Direct Submission Submission Submitted (20-NOV-2003) Agronomy and Range Science, University of California, One Shields Avenue, Davis, CA 95616, USA
                                                                             Yan, L., Loukoianov, A., Blechl, A., Tranquilli, G., Ramakrishna, W. SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J. The Wheat VRN2 Gene Is a Flowering Repressor Down-Regulated by Vernalization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGATGAGGTATAGGGAGAAGAGGAAGAAGAGCGCGCCTATGACAAGCAAATCAGATACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGCCATTTTACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1891 GAAGCCATGGCGTCGCCATCATCTCCAGCTTCGCCCTATGATCCTAGTAAACTTCACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAACATATTCCTTCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GACACAGAGATGATGGTGGGGCCTGCCCATTATCCCACAATGCAGGAGAGAGCGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGATGAGGTATAGGGAGAGAAGAGGAGGCGGCGCTATGACAAGCAAATCCGATACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rccagaaaagcrracgcrracgcrrccgccaccgcrcaacgcrracgcrracgraaggraccc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAGCCATGGCATCGCCATCATCTCCAGCTTCGCCCTATGATCCTAGTAAACTTCACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 2078;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5; Indels
                                                                                                                                                                                                                                                                                                                                                              note="winter line; tetraploid genome A"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 420; DB 15;
Pred. No. 3e-103;
0; Mismatches 5;
                                                                                                                                                                                                                                                                                     /organism="Triticum turgidum"
/mol_type="genomic DNA"
/cultivar="Langdon"
                                                                                                                                   Science 303 (5664), 1640-1644 (2004)
15016992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /protein_id="AAS60251.1"
/db_xref="G1:45390745"
                                                                                                                                                                                                                                                                                                                                xref="taxon:4571"
                                                                                                                                                                                                                                                                                                                                                                                                        oin(<96. .401,1651.
gene="VRN2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                oin(96. .401,1651.
gene="VRN2"
                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                               clone="BAC 354M17"
                                                                                                                                                                                                                                                                                                                                                                                                                                   product="ZCCT1-Td"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              codon_start=1
product="ZCCT1-Td"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     42.2%;
                                                                                                                                                                                                                                                                                                                                                                           <96. .>1965
/gene="VRN2"
                                                                                                                                                                    (bases 1 to 2078)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity 98.8
23; Conservative
                                                                                                                                                                                                                                                                          :2078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Simi
Matches 423;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            736
SOURCE
ORGANISM
                                                                                                                                      JOURNAL
· PUBMED
REFERENCE
                                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                              TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                        mRNA
                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            졍.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
```

```
(AY485644 Triticum monococcum phosph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                53745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        54101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         53865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    53805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              54161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      53921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   54041
53981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1790 bp DNA linear PLN 17-MAR-2004 turgidum cultivar Langdon ZCCT2-Td (VRN2) gene, complete
                                                                                                                                                                                                                                                                                                                                                                                                                       Ĥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        975
                                                                                                                                                                                                                                                                                                                                                                                                                                                        495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAACATATTTCCTTCTGAT 795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      54220 GIGCCAITCIGCGGGGCTGCAITCACCAGCACTAITAGCAATGCAACAATCAIGACTAIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              53864 CGGGAGGTTATGTTGATTTGAGTTTTCAAAGGTCAGCAACCAATCAAAGAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TATTTTATTGAAACAAGTCTTGTTATACTACGTGTTGATTTAAACATGTAATTTCAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  496 GACACAGAGATGATGGTGGGGCCTGCCCATTATCCCACAATGCAGGAGAGAGCAGCGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGATGAGGTATAGGGAGAAGAGAGAGGCGCCGCTATGACAAGCAAATCCGATACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   54100 GTGATGAGGTACAGGGAGAAGAGGAAGAGGGGGTGCTATGACAAGCAAATCCGCTACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        53980 GAAGCCGCTGCATCGTCGTCACCCCCAGCTTCGCCCTATGATCCTAGTAAACTTCACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -----TTCATCAAAGTAAAATAAGTTGGTTATTGATTGACCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                          436 GTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATGACTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAGCCATGGCATCGCCATCATCTCCAGCTTCGCCCTATGATCCTAGTAAACTTCACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 110000;
                                                                                                                                                                                      LOCUS AY485644 Accession AY485644
                                                                                                                                                                                                                                                                                                                                                                                                                     64;
                                                                                                                                                                                                                                                                                                                                                                             32.2%; Score 320.8; DB 15; Length 77.4%; Pred. No. 9e-76; ive 0; Mismatches 62; Indels
                                                                                                                                                                                                                                                                                                                     continuation (3 of 5) of AY485644 from base 200001 putative transposase, phosphatidylinositol phosph.
                                                                                                                                                                                                                                              210000
310000
410000
                                                                                                                                                                                                                        110000
                                                                                                                                                                                                                                                                                                     438828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             53727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        976 ATAGCTACTTTGATGTGT 993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cds.
AY485980
AY485980.1 GI:45390748
                                                                                                                                                                                      fragments
Begin
                                                                                                                                                                                                                                                                                                   400001
5) of AY485644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             53920 GGATGGTTCCAGTAGTTT-
                                                                                                                                                                                                                                          100001
200001
300001
                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 432; Conservative
                                                                       2078
```

```
(bases 1 to 2064)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                    Hordeum vulgare
                                                                                                                                                                                                                                                                          Vernalization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                          15016992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Simi
hes 273;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                   VERSION
KEYWORDS
SOURCE
ORGANISM
                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mRNA
                                                                    ACCESSION
                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                          PUBMED
                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1431 GTGCCATTCTGCGGGGCTGCATTCACCAGCACTATTAGCAATGCAACGATCATGACTATT 1490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1611 TCCAGAAAAGCTTACGCCCGAGCTCAGGCCCACGGGTCAATGCCCGCTTTGTCAAGGTACCA 1670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HDAAADYPPPPPSANCHHCRSWTTPFHETAAAGNSSRLTLEVDAGGQNMAHLLQPPA
RPRTTIVPFCGAAFTSTISNATIMTIDTEMMVGAAHNLTMQEREAKVMRYREKRKRRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1671 GAAGCCGCTGCATCGTCGTCACCCCCAGCTTCGCCCTATGATCCTAGTAAACTTCACCTC 1730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /translation="MPMSCGLCGASDCPHHMISPVLQHQEQHRLREYQFFTQGHHHHH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             615
Triticum turgidum
Triticum turgidum
Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae,
Pooideae, Triticeae, Triticum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            555
                                                                                                                                                                                                                                                                          University of
                                                                                                                                                                                                                         Ramakrishna, W.,
                                                                                                    Ramakrishna, W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGATGAGGTACAGGGAGAAGAGGGAAGAAGGGGGGTGCTATGACAAGCAAATCCGCTATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GACACAGAGATGATGGTGGGGCCTGCCCATTATCCCACAATGCAGGAGAGAGCAGCGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGATGAGGTATAGGGAGAAGAGGAGAGGCGCCCTATGACAAGCAAATCCGATACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTACCC
                                                                                             Yan,L., Loukoianov,A., Blechl,A., Tranquilli,G., Ramakrishna,W SanMiguel,P., Bennetzen,J.L., Echenique,V. and Dubcovsky,J. The Wheat VRNZ Gene Is a Flowering Repressor Down-Regulated by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGCCATGGCATCGCCATCATCTCCAGCTTCGCCCTATGATCCTAGTAAGTTCACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YDKQIRYESRKAYAELRPRVNGRFVKVPEAAASSSPPASPYDPSKLHLGWFR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                     Yan, L:, Loukoianov, A., Blechl, A., Tranquilli, G., Ramakrishr
SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26.8%; Score 267.2; DB 15; Length 1790; ilarity 86.0%; Pred. No. 1.8e-61; Conservative 0; Mismatches 48; Indels 0;
                                                                                                                                                                                                                                                                     Submitted (20-NOV-2003) Agronomy and Range Science, t
California, One Shields Avenue, Davis, CA 95616, USA
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1731 GGATGGTTCCGGTAGTTTTTCATCAAAGTAAATAAGTTGGTTA 1774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   779
                                                                                                                                                                                                                                                                                                                                                                                                                             'note="winter line; tetraploid genome A"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAA
                                                                                                                                                                                                                                                                                                                        1. 1790
/organism="Triticum turgidum"
/mol_type="genomic DNA"
/cultivar="Langdon"
                                                                                                                                                                      Science 303 (5664), 1640-1644 (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       join(29. .352,1431. .1745)
/gene="VRN2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="ZCCT2-Td"
/protein_id="AAS60252.1"
/db_xref="G1:45390749"
                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:4571"
/clone="BAC 326B2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="VRN2"
/prodinc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            product="ZCCT2-Td"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                               <29. .>1745
/gene="VRN2"
                                                                                                                                                                                                       (bases 1 to 1790)
                                                                                                                                                       Vernalization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity
                                                                                                                                                                                       15016992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         296;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9/9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                             source
                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                    AUTHORS
                                                                                                                                                                                       PUBMED
                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA
                                                                                      REFERENCE
                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                      TITLE
                                                                                                                                                                                                                                                         TITLE
 SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
```

14

RESULT

```
1815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /trānslation="msmacglcgasncpyhmmspvllhhhhhgehrqreygfpaghh
Hhhdgaadhypppqpapanchhrrsymllfherdapnnsthjdgvdagdahllld
PPAPPRATIVPFRRSAFTWIISMATIMTIOTEMAGTAYSPTMQERAKVMRYREKRK
KRRYDKQIRYESRKAYAELRPRVNGRFVKVPFBAAASPSPPASPHDPSELHLGWF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PLN 17-MAR-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1936 TCCAGAAAAGCTTACGCCCAAGCTTAGGCCACGGGTCAACGGCCGCCTTTGTCAAGGTACCT 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 615
                                                                                                                                                                                                                                                                                                                                                   Hordeum vulgare
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Pooideae; Triticeae; Hordeum.
1 (bases 1 to 2064)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               University of
AY485978 2064 bp DNA linear PLN 17-MAR-20
Hordeum vulgare cultivar Dairokkaku ZCCT-Hb (VRN2) gene, partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ramakrishna, W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGATGAGGTATAGGGAGAAGAGGAGGGGGCGCTATGACAAGCAAATCCGATACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              436 GTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1756 gracicarrececedadrecarreaceacearinada arcanecarea en 1750 gracia de 1750 gra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCAGAAAAGCTTACGCTTCAGCCTTGGCTCAACGGCCGCTTTGTCAAGGTACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1996 GAAGCCGCTGCGTCACCATCACCCCCAGCTTCGCCCCATGATCCTAGTGAACTTCACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ል
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                676 GAAGCCATGGCATCGTCATCTCCAGCTTCGCCCTATGATCCTAGTAAACTTCACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 (Joses Loukolanov, A.) Blechl, A., Tranquilli, G., Ramakrishna SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J. The Wheat VRN2 Gene Is a Flowering Repressor Down-Regulated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Yan, L., Loukolanov, A., Blechl, A., Tranquilli, G., Ramakrishn SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J. Direct Submission Submitted (20-NOV-2003) Agronomy and Range Science, Universitalifernia, One Shields Avenue, Davis, CA 95616, USA Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 2064;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 251.4; DB 15; Length
Pred. No. 4e-57;
0; Mismatches 36; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /product="ZCCT-Hb"
join (420. .752,1756. .>2064)
/gene="VRN2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . >2064)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Hordeum vulgare"
/mol_type="genomic DNA"
/cultivar="Dairokkaku"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Science 303 (5664), 1640-1644 (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product="ZCCT-Hb"
/protein_id="AAS60250.1"
/db_xref="G1:45390741"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |oin(<420. .752,1756.
|gene="VRN2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        db_xref="taxon:4513"
note="winter barley"
                                                                                                                                                      AY485978
AY485978.1 GI:45390740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       codon start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25.2%;
88.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <420. .>2064
/gene="VRN2"
```

```
411 CACCATCATCAGGAACACCCACTGCACGAGTACCAGTTCTTCGCCCAAGG-----TCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Search cor
Job time
                                                            ò
                                                                                                                  g
                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                          AY485977 10-48-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10-68-2004 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Protein id="AAS60249.1"
| db xref="GI:45390738"
| translation="MSMSCGLCGASNCAYHMMSPVLLHHHHQEHPLHEYQFFAQGHH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HHGAAADY PPPPPPPDNCHHRSWTPFHETAAPENSTRLTREVDAGGQHMAHLLOP
PAPPRATIVPFCESAPASTISNATIMTIDTEMMVGPAYNPTMQEREAKVMRYREKRKR
RRYDKQIRYESRKAYAELRPRVNGRPAKVPEAVVSPSPPTSPHDPSKLHLGWF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hordeum vulgare
Skaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae,
Pooideae, Triticeae, Hordeum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            crerciricircriccreacarcrictricace----caccagacacacagaa 291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                124 GGTTTGTGCGGCGCCAACAACTGCCCGCGCCTCATGGTCTCGCCCATTCACCATCATCAT 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGTTTGTGCGGCGCCAGCAACTGCGCGTACCACATGATGTCGCCCCGTTCTTCTTCATCAT 410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CACCATCATCAGGAGCACCAGCTGTGAGTACCAGTTCTTCGCCCATGGCAACCACCAC 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Yan.L., Loukojanov,A., Blechl,A., Tranquilli,G., Ramakrishna,W., SanMiguel,P., Bennetzen,J.L., Echenique,V. and Dubcoveky,J. Submission
Submitsed (20-NoVon)
Submitted (20-NoVon)
Galifornia, One Shields Avenue, Davis, CA 95616, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Yan,L., Loukoianov,A., Blechl,A., Tranquilli,G., Ramakrishna,W., SanMiguel,P., Bennetzen,J.L., Echenique,V. and Dubcovsky,J. The Wheat VRN2 Gene Is a Flowering Repressor Down-Regulated by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGCCTCTTCTTCTTCCTCGACGTCTCTCCTCCTCGGCTCCTCCACGCACCAGACCACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 247.6; DB 15; Length 1985;
Pred. No. 4.3e-56;
0; Mismatches 64; Indels 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .>1985)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . >1985)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Vernalization
Science 303 (5664), 1640-1644 (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Hordeum vulgare"
/mol_type="genomic DNA"
/cultivar="Dairokkaku"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene="VRN2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         db_xref="taxon:4513"
note="winter barley"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            product="ZCCT-Ha"
oin(336. .665,1677.
gene="VRN2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         product="ZCCT-Ha"
                                                                                                                                                                                                                                                                                                                                                       GI:45390737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       codon start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         336. .>1985
gene="VRN2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24.9%;
ilarity 81.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 1985)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 1985)
                              GGATGGTTC 744
                                                                                                                                                                                                                                                                                                                                                                                                                      Hordeum vulgare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                       AY485977.1
                                                                                                                                                                                                                                                                                                                        AY485977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   342;
736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            184
                                                                                                                                                                                                                                                                                                                                                       VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                             LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA
                                                                                                                                                          RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                        AY485977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
   ò
                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

```
300
                                         524
                                                                                 301 GACCACCGCAGAACATGGACCAGACCATTTCATGAAACAGCAGCGGCAGGGAACAGCAGC 360
                                                                                                                           584
                                                                                                                                                                     420
                                                                                                                                                                                                            644
                                                                                                         525 CACCACCACAGATCATGGACCACGCCGTTTCATGAAAACAGCAGCTCCAGAGAAAAAAGACCC
                                                                                                                                                                                               585 AGGCTCACACGGGGGGGGCGGCCAACACATGGCTCACCTGCTGCTGCACCG
                                     361 AGGCTCACGCTGAGGTGGGCGCAGGCGCCAACACATGGCTCACCTAGTGCAGCCACCG
                                                                                                                                                                                                                                                                                                                                                         completed: February 23, 2006, 13:30:19
he : 5419 Becs
                                                                                                                                                                                                                                                                                     | |
GC 646
                                                                                                                                                                                                                                                  421 GC 422
```

```
February 23, 2006, 11:51:16; Search time 714 Seconds (without alignments) 9296.966 Million cell updates/sec
                                                                                                                                                                                                                         1 taactgcctcttcttcc.......tagctactttgatgtgtaat 996
5.1.7
Biocceleration Ltd.
                                                                                                                                                                                                                                                                                                                                                           9993994
                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                      4996997 seqs, 3332346308 residues
GenCore version
Copyright (c) 1993 - 2006
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                       OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                          IDENTITY NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     geneseqn2004bs:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 geneseqn2003cs:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       geneseqn2004as:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            geneseqn1980s:*
geneseqn1990s:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    geneseqn2003ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          geneseqn2005s:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                geneseqn2003as:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               geneseqn2003bs:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        geneseqn2000s:4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qeneseqn2001as:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         geneseqn2001bs:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           geneseqn2002as:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            genesegn2002bs:
                                                                                                                                                                                                                                                                                                                                                                                            Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                US-10-723-947-75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N_Geneseq_21
                                                                                                                                                                                                    Perfect score:
                                                                                                                                                                                                                                                            Scoring table:
                                                                                                                                                                                                                                                                                                                    Searched:
                                                                                                                                                                                                                           Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Database
                                                                                                            on:
                                                                                                            Run
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	Ads19577 One grain	Ads19581 Langdon (Ads19576 One grain	Ads19580 Langdon (Ads19593 Winter ba		Ads19590 Winter ba	Ads19584 One grain	Ads19586 Langdon (Ads19583 One grain		_	Ads16780 Lhd4-rela	. Ads16786 Lhd4-rela	Ads16783 Lhd4-rela	Ads16785 Lhd4-rela	Ads16779 Lhd4-rela	Ads16782 Lhd4-rela	Abz12460 Arabidops
SUMMARIES	ID	ADS19577	ADS19581	ADS19576	ADS19580	ADS19593	ADS19587	ADS19590	ADS19584	ADS19586	ADS19583	ADS19592	ADS19589	ADS16780	ADS16786 '	ADS16783	ADS16785	ADS16779	ADS16782	ABZ12460
	DB	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	9
	Query Match Length DB	966	975	7051	2913	642	639	639	639	3454	5734	2043	1985	1078	1078	1078	2723	2723	2723	885
de	Query Match	100.0	91.1	56.3	55.5	45.7	45.3	45.1	44.7	32.2	32.2	25.2	24.9	9.3	9.3	9.3	9.3	9.3	9.3	7.7
	Score	966	907.2	561	553	455.2	451.4	449	445	320.8	320.8	251.4	247.6	93	93	93	93	93	93	9.97
	Result No.	1	7	М	4,	Ŋ	9	7	80	σ	10	11	12	13	14	15	16	17	18	19

Adx47666 Plant ful Ado02184 Thalecres Aac47873 Arabidops Aac45341 Arabidops Adb51874 DNA encod	Adj39390 Plant CDN Adj39403 Blant CDN Aeb65256 Rice geno Adx12661 Plant Euj Aaa78441 Plant SDF Adk54130 Plant DNA Adk54130 Plant DNA	Abn98249 Arabidops Adx1177 Plant ful Aac46126 Arabidops Aac32926 Arabidops Adx30238 Plant ful Ada49038 Wheat gen Adc03443 Wheat flo	Ac132613 Rice abio Adx50712 Plant ful Adx47569 Plant ful Acn60093 Cotton gy Acn61587 Cotton gy Adw16414 E_grandis Ada48119 Rice gene
113 133 14 10 14	4 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	4 4 4 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	734 11 ACL32613 1132 13 ADX50712 1229 13 ADX47569 596 13 ACM6093 533 13 ACM61587 1728 14 ADW16414 699 9 ADA48119
r.r. r.r. r.r.	0 2 2 4 E 2 2 2	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
76.6 76.6 76.6 76.6	75.4 74.6 73.6 72.2 71.8	71.8 71.8 71.8 71.8 71.8	669.4 689.4 666.2 66.2
22 2 2 2 2 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4	2 2 2 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 33 33 33 35 4 33 5 4 4 33 5 4 4 33 5 4 4 33 5 4 5 4	0 0 0 4 4 4 4 4 4 0 0 0 11 51 51 51 51

ALIGNMENTS

The invention relates to a recombinant ZCCT1 protein (Zn finger and CCT domain protein) coding sequence comprising a nucleic acid that hybridises to the barley ZCCT1 cDNA appearing as ADS19577. The pateent also discloses the identification of to genes, vnr1 identified as API (APETALA1) and vrn2 identified as ZCCT1 controlling vernalisation of flowering in temperate grasses. ZCCT1 also has a duplicate gene ZCCT2, all three genes New recombinant ZCCT1 protein coding sequence useful for altering a plant's (e.g., wheat, barley, rye, oats, or forage grasses) response to vernalization or flowering times. One grained wheat; chromosome 5a; 88; APETALA1; AP1; vernalisation; flowering; ZCCT1; ZCCT2; vrn1; vrn2; CArG box; plant; gene. Claim 1; SEQ ID NO 75; 115pp; English. Loukoianov A; One grained wheat DV92 ZCCT1 cDNA. ADS19577 standard; cDNA; 996 BP 26-NOV-2003; 2003US-00723947. 11-APR-2003; 2003US-00412137. (first entry) CALIFORNIA. Dubcovsky J, Yan L, WPI; 2004-728059/71. Triticum monococcum. P-PSDB; ADS19578 US2004205848-A1. (REGC) UNIV 30-DEC-2004 14-OCT-2004. ADS19577; RESULT 1 ADS19577

have been localised to chromosome 5a of one grained wheat, Triticum monococcum. ZCCT1 is the repressor of API whose promoter contains a binding site for ZCCT1 termed the CArG box. Also included are a vector comprising the recombinant ZCCT1 protein coding sequence above, a cell comprising the vector, a transgenic plant comprising the recombinant ZCCT1 protein coding sequence above (or a genetic construct that inhibits ZCCT1 repression of API), a seed from the transgenic plant, a method for altering a plant's response to vernalisation and a molecular marker for Vrn2 derived from ADS19577. The genetic construct is an interference RNA construct (RNA) that inhibits ZCCT1 activity and comprises an antisense construct that inhibits ZCCT1 activity and comprises an antisense a repression defective ZCCT1 protein operably linked to a promoter or a nucleic acid sequence encoding a DNA binding defective ZCCT1 protein sednence 8X999999999999998888

Sequence 996 BP; 281 A; 273 C; 224 G; 218 T; 0 U; 0 Other;

Gaps 0; Length 996; Indels Query Match 100.0%; Score 996; DB 13; Best Local Similarity 100.0%; Pred. No. 6e-288; Matches 996; Conservative 0; Mismatches 0:

9 TAACTGCCTCTTCTTCTTCCTCGACGTCTCTCCTCCTCGGCTCCTCCACGCCACCAGACCA

09

> g ò В ò g ò d

120 61 61

> a a ò g ò a ò g ò 셤 ò g ð 셤

ò

AGGCTCACGCTGGAGGTGGGCGCCAGCCCAACACATGGCTCACCTAGTGCAGCCACCG GCAAGACCCCACATCGTGCCATTTCACGGAGGTGCATTCACCAACAATGAA GCAAGAGCCCACATCGTGCCATTTCACGGAGGTGCATTCACCAACACACTTTAGCAATGAA 421 421

GCAATCATGACTATTGACACAGAGATGATGGTGGGGCCTGCCCATTATCCCACAATGCAG GCAATCATGACTATTGACACAGAGATGATGTGGGGGCCTGCCCATTATCCCACAATGCAG 481 481

540

540 600 900 99 999 720 720 780

480 480

GAGAGGAGCAGCGAAGGTGATGAGGTATAGGGAGAAGAGGAAGAGGCGGCGCCTATGACAAG GAGAGAGCAGCGAAGGTGATGAGGTATAGGGAGAAGAGGAGAAGAGGCGGCGCTATGACAAG 541 541

CAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGC rrrercaageraccedagecarescarescarearerecaserrescerarisarer **AGTAAA**CTTCACCTCGGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAAC CAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCCATGGGTCAACGGCCGC 661 601 601 661 721

> g à g

ਨੇ

096 840 840 900 900 960 CAATCAAAATGTATTTATTGAAACAAGTCTTGTTATACTACGTGTTGATTTAAACA 781 ATATTICCTICTGATTGATCCACCGGTGAAGCAGTTGTTCCTCAAAGTAAATAAGTCGG CAATCAAACAAAATGTATTTATTGAAACAAGTCTTGTTATACTACGTGTTGATTTAAACA 966 . 966 TGTAATTTCAAGAGGATAGCTACTTTGATGTGTAAT TGTAATTTCAAGAGGATAGCTACTTTGATGTGTAAT 961 781 841 901 196 901 유 ò ద ò g ò g

ADS19581 standard; cDNA; 975 ADS1958:

RESULT

ADS19581;

(first entry) 30-DEC-2004 Langdon (tetrapolid) wheat ZCCT1 cDNA.

ss; APETALA1; AP1; vernalisation; flowering; ZCCT1; ; CArG box; plant; gene. vrnl; vrn2; wheat; emmer

Triticum turgidum; subsp. dicoccoides.

US2004205848-A1.

14-OCT-2004

26-NOV-2003; 2003US-00723947.

11-APR-2003; 2003US-00412137

(REGC) UNIV CALIFORNIA.

Yan L, Dubcovsky J,

2004-728059/71. WPI; 2004-728059/ P-PSDB; ADS19582.

420

New recombinant ZCCT1 protein coding sequence useful for altering a plant's (e.g., wheat, barley, rye, oats, or forage grasses) response vernalization or flowering times.

Disclosure; SEQ ID NO 79; 115pp; English.

The invention relates to a recombinant ZCCT1 protein (Zn finger and CCT domain protein) coding sequence comprising a nucleic acid that hybridises to the barley ZCCT1 cDNA appearing as ADS19577. The patent also discloses the identification of to genes, vini identified as API (APETALAI) and control identified as ZCCT1 controlling vernalisation of flowering in the identified as ZCCT1 controlling vernalisation of flowering in composerses. ZCCT1 also has a duplicate gene ZCCT2, all three genes contains a consoccum. ZCCT1 is the repressor of API whose promoter contains a comprising the for ZCCT1 termed the CArG box. Also included are a vector comprising the recombinant ZCCT1 protein coding sequence above, a cell comprising the vector, a transgenic plant comprising the recombinant ZCCT1 protein coding sequence above (or a genetic construct that inhibits accT1 repression of API), a seed from the transgenic plant, a method for altering a plant's response to vernalisation and a molecular marker for vrn2 derived from ADS19577. The genetic construct is an interference RNA construct (RNAI) that inhibits ZCCT1 activity and comprises an antisense construct that inhibits ZCCT1 activity and comprises an antisense construct that inhibits ZCCT1 activity and comprises an antisense construct that inhibits ZCCT1 activity a nucleic acid sequence encoding a DNA binding defective ZCCT1 protein

m

8 X G G

g ð g ò g

ò 셤 원

ò

g

ò

g

ò 유 δ

ò

셤 ð 셤 ò 셤 ઠે

```
ADS19576
                 g
                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                            120
                                                                                                                                                               120
                                                                                                                                                                                                              180
                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                   279
                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                                                          399
                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                    459
                                                                                                                                                                                                                                                                                                                                                                                                                                                          540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCGGTTTGTGCGGCCCAACAACTGCCCGCGCCTCATGGTCTCGCCCATTCACCATCAT 180
                                                                                                                                                                                                                                                                                                                                              GACCATAGCAGAACATGGACCACACCATTTCATGAAACAGCAGCTGCAGGAACAGCAGC 339
                                                                                                9
                                                                                                                      9
 ZCCT CDNA
                                                                                                                                                        AGGCTCACGCTGGAGGTGGCGCGCACCGACCCATGGCTCACTGCAGCCACCG
                                                                                                                                                                                                                                                                                                                                                                                                                            GCAAGAGCCCACATCGTGCCATTTTACGGAGGTGCATTCACCCAACACTATTAGCAATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCAATCATGACTATTGACACAGAGATGATGATGGTGGGGCCTGCCCATTATCCCACAATGCAG
                                                                                                             CATCACCATCATCATCAGGAGCACCAGCTGTGTGAGTACCAGTTCTTCGCCCATGGCAACCAC
                                                                                                                                                                                                                                                 CACCACCACCACCATGGCTCGGCAGCAGCTACCCAGTGCCACCGCCGCCAGACAACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAATCATGACTATTGACACAGAGATGATGGTGGGGCCTGCCCATTATCCCACAATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAGAGAGCAGCGAAGGTGATGAGGTATAAGGGAGAAGAGGGAAGAGGCGGCGCTATGACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGAGCAGCGAAGGTGATGAGGTATAGGGAGAAGAGGAGAAGAGGCGGCGCTATGACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAAATCAGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCACGGGTCAACGGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGTAAACTTCACCTCGGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAATCAAACAAATGTATTTATTGAAACAAGTCTTGTTATACTACGTGTTGATTTAAACA
                                                                                                CACCACCACCACC---------ACCCAGTGCCACTGCCGCCAGCTACTTC
                                                                                                                                                                                                                                                                                                                         GACCACCGCAGAACATGGACCAGACCATTTCATGAAACAGCAGCGGCAGGGAACAGCAGC
                                                                                                                                                                                                                                                                                                                                                                    AGGCTCACGCTGGAGGTGGGCGCAGGCGGCCAACACATGGCTCACCTAGTGCAGCCACCG
                                                                                                                                                                                                                                                                                                                                                                                                                GCAAGAGCCCACATCGTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAATCCGATACGAGTCCAGAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTGTCAAGGTACCCGAAGCCATGGCATCGCCATCTCTCCAGCTTCGCCCTATGATCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTGTCAAGGTACCCGAAGCCATGGCGTCGCCATCATCTCCAGCTTCGCCCTATGATCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGTAAACTTCACCTCGGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATATTTCCTTCTGATTGATCCACCCGTGAAGCAGTTGTTCCTCAAAGTAAATAAGTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         760 ATATTTCCTTCTGATTGATCCACCCGTGAAGCAGTTGTTCCTCAAAGTAAATAAGTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                           21;
  a plant
                               Sequence 975 BP; 276 A; 263 C; 218 G; 218 T; 0 U; 0 Other;
                                                                          23; Indels
operably linked to a promoter. The present sequence is
                                                     DB 13;
                                                    91.1%; . Score 907.2; DB 13; 95.6%; Pred. No. 2.8e-261;
                                                                          0; Mismatches
                                                                           Matches 952; Conservative
                                                               Local Similarity
                                                                                                                                            61
                                                                                                                                                                                     121
                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                              280
                                                                                                                                                                                                                                                                                                                                                                                         340
                                                                                                                                                                                                                                                                                                                                                                                                                                    400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    820
                                                                                                                                                                61
                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 880
                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           901
```

유

ઠે g g ઠે g 8

ò

```
The invention relates to a recombinant ZCCT1 protein (Zn finger and CCT domain protein) coding sequence comprising an nucleic acid that hybridises to the barley ZCCT1 cDNA appearing as ADS19577. The patent also discloses the identification of to genes, viril identified as API (APETALA) and viril identified as ZCCT1 controlling vernalisation of flowering in temperate grasses. ZCCT1 also has a duplicate gene ZCCT2, all three genes have been localised to chromosome 5a of one grained wheat, Triticum monococcum. ZCCT1 is the repressor of API whose promoter contains a binding site for ZCCT1 termed the CArG box. Also included are a vector comprising the recombinant ZCCT1 protein coding sequence above, a cell comprising the vector, a transgenic plant comprising the recombinant CC ZCCT1 protein coding sequence above (or a genetic construct that inhibits ZCCT1 protein and a molecular marker for altering a plant 's response to vernalisation and a molecular marker for altering a plant inhibits ZCCT1 activity and comprises an antisense construct that inhibits ZCCT1 activity and comprises an antisense construct that inhibits ZCCT1 protein operably linked to a promoter or a nucleic acid sequence encoding a DNA binding defective ZCCT1 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4582 GIGCCAFITICACGGAGGIGCATICACCAACACTATIAGCAATGAAGCAATCATGACTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New recombinant ZCCT1 protein coding sequence useful for altering a plant's (e.g., wheat, barley, rye, oats, or forage grasses) response vernalization or flowering times.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 One grained wheat; chromosome 5a; ds; APETALA1; AP1; vernalisation; flowering; ZCCT1; ZCCT2; vrn1; vrn2; CArG box; plant; gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 7051 BP; 2058 A; 1636 C; 1630 G; 1727 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 7051;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
56.3%; Score 561; DB 13; L
Best Local Similarity 100.0%; Pred. No. 7.5e-157;
Matches 561; Conservative 0; Mismatches 0;
                                       940 TGTAATITCAAGAGGATAGCTACTTTGATGTGTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          One grained wheat DV92 ZCCT1 genomic DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure; SEQ ID NO 74; 115pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Loukoianov A;
                                                                                                                                                                                                                                                                 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2003US-00412137.
                                                                                                                                                                                                                                                             ADS19576 standard; DNA; 7051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26-NOV-2003; 2003US-00723947
                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dubcovsky J, Yan L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             genomic DNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2004-728059/71.
P-PSDB; ADS19578.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Triticum monococcum
961 TGTAATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US2004205848-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11-APR-2003;
                                                                                                                                                                                                                                                                                                                                                                                                               30-DEC-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-OCT-2004
                                                                                                                                                                                                                                                                                                                                        ADS19576;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  436
```

S

ö

ઠે

ò а ò g ò 셤

```
CC The invention relates to a recombinant ZCCT1 protein (Zn finger and CCT domain protein) coding sequence comprising a nucleic acid that hybridises CC to the barley ZCCT1 CDNA appearing as ADS19577. The patent also discloses the identification of to genes, vrnl identified as API (APETALA) and cvrl identified as ZCCT1 controlling vernalisation of flowering in a temperate grasses. ZCCT1 also has a duplicate gene ZCCT2, all three genes CC temperate grasses. ZCCT1 also has a duplicate grained wheat, Triticum monococcum. ZCCT1 is the repressor of API whose promoter contains a binding site for ZCCT1 termed the CArG box. Also included are a vector comprising the recombinant ZCCT1 protein coding sequence above, a cell comprising the vector, a transgenic plant comprising the recombinant CC ZCCT1 protein coding sequence above (or a genetic construct that inhibits CCT1 protein and a molecular marker for altering a plant's response to vernalisation and a molecular marker for vinz derived from ADS19577. The genetic construct is an interference RNA construct that inhibits ZCCT1 activity and comprises an antisense construct that inhibits ZCCT1 activity and comprises an antisense construct that inhibits ZCCT1 activity and comprises an antisense construct that inhibits ZCCT1 protein operably linked to a promoter or a nucleic acid sequence encoding a DNA binding defective ZCCT1 protein connective is a plant ZCCT1 genomic DNA semience.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAAGCCATGGCGTCGCCATCATCTCCCAGCTTCGCCCTATGATCCTAGTAAACTTCACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2433 GGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAATGATAACATATTTCCTTCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATITIATIGAAACAAGICTIGITATACIACGIGITGAITITAAACAIGIAAITITCAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                            GTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2133 GTGCCATTTTACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGATGAGGTATAGGGAGAAGAGGAAGAGGCGCCGCTATGACAAGCAAATCCGATACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAGCCATGGCATCGCCATCTCCCAGCTTCGCCCTATGATCCTAGTAAACTTCACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAACATATTTCCTTCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                             .
,
                                                                                                                                                                                                                                                                                                                                                   Sequence 2913 BP; .867 A; 627 C; 575 G; 844 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                             5; Indels
                                                                                                                                                                                                                                                                                                                                                                             Score 553; DB 13;
Pred. No. 1.2e-154;
0; Mismatches 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             976 ATAGCTACTTTGATGTGTAAT 996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        멾.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADS19593 standard; cDNA; 642
                                                                                                                                                                                                                                                                                                                                                                                  55.5%;
                                                                                                                                                                                                                                                                                                                                                                                                99.18;
                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 99.1
Matches 556, Conservative
                                                                                                                                                                                                                                                                                                                      genomic DNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9/9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 5
ADS19593
ID ADS1
XX
           %X02020202020202020202020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                               5061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5121
                                                                                                  4761
                                                                                                                                                                4821
                                                                                                                                                                                                                           4881
                                                                                                                                                                                                                                                                                       4941
                                                                                                                                                                                                                                                                                                                                                   5001
                                      4701
                                                                     615
                                                                                                                                 675
                                                                                                                                                                                             735
                                                                                                                                                                                                                                                          795
                                                                                                                                                                                                                                                                                                                      855
                                                                                                                                                                                                                                                                                                                                                                                  915
                                                                                                                                                                                                                                                                                                                                                                                                                                              975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                    TATTTATTGAAACAAGTCTTGTTATACTACGTGTTGATTTAAACATGTAATTTCAAGAGG
                           TCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTACCC
                                                                                                                                                                                                               GAAGCCATGGCATCGCCATCATCTCCCGGCTTCGCCCTATGATCCTAGTAAACTTCACCTC
                                                                                                                                                                                                                                                                              GTGATGAGGTATAGGGAGAAGAGGAAGAGGCGGCGCTATGACAAGCAAATCCGATACGAG
                                                                                                                                 TCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTACCC
                                                                                                                                                                                                                                                          GGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAACATATTCCTTCTGAT
                                                                                                                                                                                                                                                                                                                      TATTTATTGAAACAAGTCTTGTTATACTACGTGTTGATTTAAACATGTAATTTCAAGAGG
                                                                                                                                                                                              GAAGCCATGGCATCGCCATCATCTCCAGCTTCGCCCTATGATCCTAGTAAACTTCACCTC
                                                                                                                                                                                                                                                                                                                                                                                  ds; APETALA1; AP1; vernalisation; flowering; ZCCT1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence useful for altering a
its, or forage grasses) response
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Langdon (tetrapolid) wheat ZCCT1 genomic DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          recombinant ZCCT1 protein coding sequ
it's (e.g., wheat, barley, rye, oats,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ZCCT2; vrn1; vrn2; CArG box; plant; gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; SEQ ID NO 78; 115pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            turgidum; subsp. dicoccoides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATAGCTACTTTGATGTGTAAT 996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           plant's (e.g., wheat, barley, rye
vernalization or flowering times.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATAGCTACTTTGATGTGTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADS19580 standard; DNA; 2913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26-NOV-2003; 2003US-00723947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11-APR-2003; 2003US-00412137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Yan L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2004-728059/71.
P-PSDB; ADS19582.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              emmer wheat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US2004205848-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Dubcovsky J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-DEC-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14-OCT-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5062
                                                                                                  4702
                                                                                                                                                                4762
                                                                                                                                                                                                                           4822
                                                                   556
                                                                                                                                 919
                                                                                                                                                                                             919
                                                                                                                                                                                                                                                          736
                                                                                                                                                                                                                                                                                                                      964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           916
                                                                                                                                                                                                                                                                                                                                                                                  928
                                                                                                                                                                                                                                                                                                                                                                                                                                               916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADS19580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 4
                                                                                            g
                                                                                                                                                              셤
                                 g
                                                                                                                               ઠે
                                                                                                                                                                                         ò
                                                                                                                                                                                                                        유
                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                      g
```

2372

675

2312

615

2192

495

2252

ö

2432

735

2552

918

2492

855

795

2672

CIVIL VALUE BACK

```
181
                                                349
                                                                                  241
                                                                                                                   409
                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                       523
                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                             643
                                                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 703
                                                                                                                                                                                     463
                                                                                                                                                                                                                                                                                                                         583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 6
ADS19587
                                              ò
                                                                            요
                                                                                                                  ð
                                                                                                                                            원
                                                                                                                                                                                    ò
                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                  음
                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      to the barley ZCCT1 cDNA appearing as ADS19577. The patent also discloses to the barley ZCCT1 cDNA appearing as ADS19577. The patent also discloses to the barley ZCCT1 cDNA appearing as ADS19577. The patent also discloses to the dentification of to genes, vrn1 identified as APT (APPTALA1) and tremperate grasses. ZCCT1 also has a duplicate gene ZCCT2, all three genes have been localised to chromosome 5a of one grained wheat, Triticum moncoccum. ZCCT1 is the repressor of API whose promoter contains a binding site for ZCCT1 termed the CArG box. Also included are a vector comprising the recombinant ZCCT1 protein coding sequence above, a cell comprising the vector, a transgenic plant comprising the vector, a transgenic plant comprising the vector compined as a comprising the vector, a transgenic plant of appearing a plant's response to vernalisation and a molecular marker for altering a plant's response to vernalisation and a molecular marker for vernalisation and a molecular marker for altering a plant's response to vernalisation and a molecular marker for vernalisation that inhibits ZCCT1 activity and comprises an antisense construct that inhibits ZCCT1 activity and comprises an antisense construct that inhibits ZCCT1 activity and comprises an antisense construct that inhibits ZCCT1 activity and comprises an antisense and a plant in this inhibits ZCCT1 activity and comprise and a molecular marker for construct that inhibits ZCCT1 activity and comprise and antisense and antisense
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   invention relates to a recombinant ZCCTl protein (In finger and CCT ain protein) coding sequence comprising a nucleic acid that hybridises
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           169 ATTCACCATCATCATCACCATCATCAGGAGCACCAGCTGTGTGAGTACCAGTTCTTCGCC 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATGGCAACCACCACCACCACCATGGCTCGGCAGCAGCTACCCAGTGCCACCGCCG 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               chaderchicacchicacchicaceececedadachactraccaccecacadacacacid 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09
                                                                                                  Barley; ss; APETALA1; AP1; vernalisation; flowering; ZCCT1; ZCCT2; vrn1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The present sequence is a plant ZCCT cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a repression defective ZCCT1 protein operably linked to a promoter or a nucleic acid sequence encoding a DNA binding defective ZCCT1 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGTCCATGTCATGCGGTTTTGTGCGGCGCCAACAACTGCCCGCGCCTCATGGTCTCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Arcrecardecardecerrrerecedecedecaarrecedarreacardarereced
                                                                                                                                                                                                                                                                                                                                                                                                                                             protein coding sequence useful for altering a barley, rye, oats, or forage grasses) response
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 642;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C; 163 G; 108 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 455.2; DB 13;
Pred. No. 1.2e-125;
0; Mismatches 103;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure; SEQ ID NO 91; 115pp; English.
                                                                                                                                                                                                                                                                                                                                                             Loukoianov A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               plant's (e.g., wheat, barley, rye, vernalization or flowering times.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    to a promoter.
                                                                                                                                                                                                                                                       26-NOV-2003; 2003US-00723947
                                                                                                                                                                                                                                                                                       11-APR-2003; 2003US-00412137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    45.7%;
                                                                                                                  CArG box; plant; gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 642 BP; 165 A; 206
                                                                 ZCCT-Hb cDNA.
                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        533; Conservative
                                                                                                                                                                                                                                                                                                                         (REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                               recombinant ZCCTl
                                                                                                                                                                                                                                                                                                                                                           Yan L,
                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2004-728059/71.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity
                                                                                                                                                  Hordeum vulgare,
                                                                                                                                                                                                                                                                                                                                                                                                               P-PSDB; ADS19594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    operably linked
                                                                                                                                                                                     US2004205848-A1
                                                                   barley
                                                                                                                                                                                                                                                                                                                                                           Dubcovsky J,
                                30-DEC-2004
                                                                                                                                                                                                                     14-OCT-2004.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
ADS19593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sequence
                                                                   Winter
                                                                                                                     vrn2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
8XCCCCCCCCCCCCCCCCCCCX8XBABABABXBXBXBXBXBXBXBXBXXBXXBXXBXXBXAXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
```

```
420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The invention relates to a recombinant ZCCT1 protein (Zn finger and CCT domain protein) coding sequence comprising a nucleic acid that hybridises to the barley ZCCT1 cDNA appearing as ADS1977. The patent also discloses the identification of to genes, vrnl identified as AP1 (APETALA1) and vrn2 identified as ZCCT1 controlling vernalisation of flowering in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                    582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         642
                           240
                                                                                            408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   600
                                                                                                                                                    GTGAATAGCACCAGGCTCACACAAGAGGTGGACGCAGGCGAACAGATGGCTCACCTG 300
                                                                                                                                                                                                                  462
                                                                                                                                                                                                                                                                   360
                                                                                                                                                                                                                                                                                                                                 522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGAACAGCAGCAGGTCACGCTGGAGGTGGGCGCCGGCCCAACACACATGGCTCACCTA
                                                                                                                                                                                                                                                                      301 CTGCAGCCACCGGCGCCCAAGAGCCACCATCGTGCCATTCCGCCGGAGTGCATTCACC
                                                                                                                                                                                                                                                                                                                                                                                         AACACTATTAGCAACGCAACGATCATGACTATTGATACAGAGATGATGGCGGGGGACTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                    CATTATCCCACAATGCAGGAGAGAGCAGCGAAGGTGATGAGGTATAGGGAGAAGAGGAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGCGGCGTATGACAAGCAAATCCGATACGAGTCCAGAAAAGCTTACGCTTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGGGGGCTATGACAAGCAAATCCGCTACGAGTCCAGAAAAGCTTACGCCGAGCTTAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCATGGGTCAACGGCCGCTTTGTCAAGGTACCCGGAAGCCATGGCATCGCCATCATCTCCA
                                                                                                                                                                                                                                                                                                                                 AACACTATTAGCAATGAAGCAATCATGACTATTGACACAGAGATGATGGTGGGGCCTGCC
                                                                                                                                                                                                               GIGCAGCCACCGG-----CAAGAGCCCACATCGIGCCATITCACGGAGGTGCATICACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Wild emmer wheat; ss; APETALA1; AP1; vernalisation; flowering; ZCCT1; ZCCT2; vrn1; vrn2; CArG box; plant; gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New recombinant ZCCT1 protein coding sequence useful for altering a plant's (e.g., wheat, barley, rye, oats, or forage grasses) response vernalization or flowering times.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTTCGCCCCATGATCCTAGTGAACTTCACCTCGGATGGTTC 642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTTCGCCCTATGATCCTAGTAACTTCACCTCGGATGGTTC 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure; SEQ ID NO 85; 115pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Triticum turgidum; subsp. dicoccoides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Langdon (tetrapolid) wheat ZCCT2 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Loukoianov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADS19587 standard; cDNA; 639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11-APR-2003; 2003US-00412137.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         26-NOV-2003; 2003US-00723947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30-DEC-2004 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Dubcovsky J, Yan L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2004-728059/71.
P-PSDB; ADS19588.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US2004205848-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14-OCT-2004
```

Barley; ss; APETALA1; AP1; vernalisation; flowering; ZCCT1; ZCCT2; vrn1; vrn2; CArG box; plant; gene.

Winter barley ZCCT-Ha cDNA 30-DEC-2004 (first entry)

11-APR-2003; 2003US-00412137.

26-NOV-2003; 14-OCT-2004

US2004205848-A1. Hordeum vulgare.

```
mean occur. ZCCT1 is the repressor of AP1 whose promoter contains a binding site for ZCCT1 termed the CArG box. Also included are a vector comprising the recombinant ZCCT1 protein coding sequence above, a cell comprising the recombinant ZCCT1 protein coding sequence above, a cell comprising the vector, a transgenic plant comprising the recombinant ZCCT1. Protein coding sequence above (or a genetic construct that inhibits ZCCT1 repression of AP1), a seed from the transgenic plant, a method for altering a plant fs response to vernalisation and a molecular marker for Vrn2 derived from AD519577. The genetic construct is an interference RNA construct (RNA) that inhibits ZCCT1 activity and comprises an antisense construct that inhibits ZCCT1 activity, a nucleic acid sequence encoding a repression defective ZCCT1 protein operably linked to a promoter or a nucleic acid sequence encoding a DNA binding defective ZCCT1 protein operably linked to a promoter. The present sequence is a plant ZCCT cDNA
temperate grasses. ZCCT1 also has a duplicate gene ZCCT2, all three genes have been localised to chromosome 5a of one grained wheat, Triticum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                               61 GTTCT-----TCAGCATCAGGAACAACACCGGCTGCGCGAGTACCAGTTCTTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 172 TCAGCCAATTGCCACCACTGCAGATCATGGACCACACCGTTTCATGAAACAGCAGCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGAACAGCAGCTCACGCTGGAGGTGGGCGCAGGCGGCCAACACACATGGCTCACCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGCAGCCACCGG-----CAAGAGCCCACATCGTGCCATTTCACGGAGGTGCATTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACACTATTAGCAATGAAGCAATCATGACTATTGACACAGAGATGATGGTGGGGCCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCACTATTAGCAATGCAACGATCATGACTATTGATACAGAGATGATGGTGGGGGCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CATTATCCCACAATGCAGGAGAGAGAGCGGAAGGTGATGAGGTATAGGGAGAAGAGGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGCGGCGCTATGACAAGCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGCGGTGCTATGACAACCAAATCCGCTATGAGTCCAGAAAAGCTTACGCCGAGCTCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGTCCATGTCATGCGGTTTGTGCGGCGCCAACAACTGCCCGGGGCCTCATGGTCTCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CATGGCAACCACCACCACCACCATGGCTCGGCAGAGTACCCAGTGCCACCGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCATGGGTCAACGGCCGCTTTGTCAAGGTACCCGAAGCCATGGCATCGCCATCATCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCACGGGTCAATGGCCGCTTTGTCAAGGTACCAGAAGCCGCTGCATCGTCGTCGTCACCCCCA
                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                   15;
                                                                                                                                                                                                                                                                                                                                                              DB 13; Length 639;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   638
                                                                                                                                                                                                                                                                                                                     Sequence 639 BP; 161 A; 200 C; 172 G; 106 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                 91; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTTCGCCCTATGATCCTAGTAAACTTCACCTCGGATGGTTCCGGTA
                                                                                                                                                                                                                                                                                                                                                            Score 451.4; DB 13.
Pred. No. 1.6e-124;
                                                                                                                                                                                                                                                                                                                                                                                                 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                            45.3%;
                                                                                                                                                                                                                                                                                                                                                                              Local Similarity 83.6
nes 541; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                      109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           532
                                                                                                                                                                                                                                                                                      seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      643
                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              703
 8x3333333333333333333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
```

```
The invention relates to a recombinant ZCCT1 protein (Zn finger and CCT domain protein) coding sequence comprising an nucleic acid that hybridises to the barley ZCCT1 cDNA appearing as ADS19577. The patent also discloses the identification of to genes, vanl identified as API (APBTALA1) and vanz identified as ZCCT1 also has a duplicate gene ZCCT2, all three genes remperate grasses. ZCCT1 also has a duplicate gene ZCCT2, all three genes have been localised to chromosome Sa of one grained wheat, Triticum monococcum. ZCCT1 is the repressor of API whose promoter contains a monococcum. ZCCT1 is the repressor of API whose promoter contains a comprising the recombinant ZCCT1 protein coding sequence above, a cell comprising the vector, a transgenic plant comprising the recombinant ZCCT1 protein coding sequence above (or a genetic construct that inhibits ZCCT1 repression of API), a seed from the transgenic plant, a method for altering a plant's response to vernalisation and a molecular marker for vrn derived from ADS19577. The genetic construct is an interference RNA construct (RNA) that inhibits ZCCT1 activity, a nucleic acid sequence encoding a CCT1 protein concerned as a plant ZCCT1 protein operably linked to a promoter. The present sequence is a plant ZCCT cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   t
C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   109 ATGTCCATGTCATGCGGTTTTGTGCGGCGCCAACAACTGCCCGCGCCTCATGGTCTCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 GIICITCIICAICAICACCAICAICAGGAACACCCACIGCACGGGTACCAGIICIIICGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATGGCAACCACCACCACCACCATGGCTCGGCAGCAGACTACCCAGTGCCACCG---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                recombinant ZCCT1 protein coding sequence useful for altering a it's (e.g., wheat, barley, rye, oats, or forage grasses) response

    Archickarchickarchickacickackachchickachchickarchickachchickachchickachchickarchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchickachchi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   169 ATTCACCATCATCATCACCATCAGGAGCACCAGCTGTGTGAGTACCAGTTCTTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          45.1%; Score 449; DB 13; Length 639; llarity 84.5%; Pred. No. 8.5e-124; Conservative 0; Mismatches 85; Indels 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 639 BP; 164 A; 208 C; 159 G; 108 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; SEQ ID NO 88; 115pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Loukoianov A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               plant's (e.g., wheat, barley, rye
vernalization or flowering times.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Dubcovsky J, Yan L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2004-728059/71.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P-PSDB; ADS19591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           545;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Loca
Matches
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

ADS19590 standard; cDNA; 639

RESULT 7 ADS19590 ADS19590;

g

ò

g ò g ઠે q ò 셤

ò

```
The invention relates to a recombinant ZCCTl protein (Zn finger and CCT domain protein) coding sequence comprising a nucleic acid that hybridises to the barley ZCCTl pDNA appearing as ADS19577. The patent also discloses the identification of to genes, vrnl identified as API (APETALA1) and vrn2 identified as ZCCTl controlling vernalisation of flowering in temperate grasses. ZCCTl also has a duplicate gene ZCCT2, all three genes
                                                                                                                                                                                                                                                                                                                                        protein coding sequi
barley, rye, oats,
                                                                                                                                                                                                                                                                              Loukoianov A;
                                                                                                                                                                                                                                                                                                                                      New recombinant ZCCTl protein codi
plant's (e.g., wheat, barley, rye,
vernalization or flowering times.
                                                                       CDNA.
                                                                      wheat DV92 ZCCT2
                                                                                                                                                                                                     26-NOV-2003; 2003US-00723947
                                                                                                                                                                                                                             11-APR-2003; 2003US-00412137
                                              (first entry)
                                                                                                                                                                                                                                                     (REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                                                                                             Yan L,
                                                                                                                                                                                                                                                                                                     WPI; 2004-728059/71.
                                                                                                                                Triticum monococcum
standard;
                                                                                                                                                                                                                                                                                                                P-PSDB; ADS19585
                                                                                                                                                                                                                                                                             Dubcovsky J,
                                              30-DEC-2004
                                                                      grained
                                                                                                                                                                                14-OCT-2004
ADS19584
                      ADS19584
                                                                      One
```

```
셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                       405
                                                                                294
                                                                                                                       459
                                                                                                                                                              354
                                                                                                                                                                                                        519
                                                                                                                                                                                                                                                 414
                                                                                                                                                                                                                                                                                          579
                                                                                                                                                                                                                                                                                                                                                                             639
                                                                                                                                                                                                                                                                                                                                                                                                                                                             669
                                                                                                                                                                                                                                                                                                                                 AAGAGGCGCCCTATGACAAGCAAATCCGCTACGAGTCCAGAAAAGCTTACGCCGAGCTC 534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       535 AGGCCACGGGTCAATGGCCGCTTTGCCAAGGTGCCCGAAGCCGTTGTGTGTCTCCATCACCC 594
CCGCCAGACAATTGCCACCACCACAGATCATGGACCACGCCGTTTCATGAAACAGCAGCT
                                       GCAGGGAACAGCAGCAGGCTCACGCTGGAGGTGGGCGCAGGCGGCCAACACATGGCTCAC
                                                                 CCAGAGAACAGCACCAGGCTCACACGGGAGGTGGACGCAGGCGGCCAACACACATGGCTCAC
                                                                                                                                                              crecrecaccaccaccacaacaccaccarcarcarecarrecarrecasasasasarre
                                                                                                                       CTAGTGCAGCCACCGG-----CAAGAGCCCACATCGTGCCATTTCACGGAGGTGCATTC
                                                                                                                                                                                                                                               355 GCCAGCACTATTAGCAACGCAACGATCATGACTATTGATACAGAAATGATGGTGGGGCCT
                                                                                                                                                                                                                                                                                          GCCCATTATCCCACAATGCAGGAGAGAGCAGCGAAGGTGATGAGGTATAGGGAGAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGGCCATGGGTCAACGGCCGCTTTGTCAAGGTACCCGAAGCCATGGCATCGCCATCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCAACTTCCCCCCATGATCCTAGTAAACTTCACCTCGGATGGTTC 639
                                                                                                                                                              295
                                                                                                                                                                                                                                                                                                                               415
                                                                                                                                                                                                                                                                                                                                                                                                                    475
                                       346
                                                                                                                     406
                                                                                                                                                                                                        460
                                                                                                                                                                                                                                                                                                                                                                           580
                                                                                                                                                                                                                                                                                                                                                                                                                                                             640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         595
```

셤

ð

ò

ADS19584

One grained wheat; chromosome 5a; 8s; APETALA1; AP1; vernalisation; flowering; ZCCT1; ZCCT2; vrn1; vrn2; CArG box; plant; gene.

sequence useful for altering a Disclosure; SEQ ID NO 82; 115pp; English. ADS19586

have been localised to chromosome 5a of one grained wheat, Triticum monococcum. ZCCT1 is the repressor of API whose promoter contains a binding site for ZCCT1 termed the CArG box. Also included are a vector comprising the recombinant ZCCT1 protein coding sequence above, a cell comprising the recombinant ZCCT1 protein coding sequence above (or a genetic construct that inhibits ZCCT1 protein coding sequence above (or a genetic construct that inhibits ZCCT1 repression of API), a seed from the transgenic plant, a method for altering a plant's response to vernalisation and a molecular marker for Vrn2 derived from ADS19577. The genetic construct is an interference RNA construct (RNA1) that inhibits ZCCT1 activity and comprises an antisense a repression defective ZCCT1 activity, a nucleic acid sequence encoding a repression defective ZCCT1 protein operably linked to a promoter or a nucleic acid sequence encoding operably linked to a promoter. The present sequence is a plant ZCCT CDNA 169 ATTCACCATCATCATCACCATCATCAGGAGCACCAGCTGTGTGAGTACCAGTTCTTCGCC CATGGCAACCACCACCACCACCATGGCTCGGCAGCAGCTACCCAGTGCCACCGCCG 232 GGGAACAGCAGCAGAACTCACGCTGGAGGTAGATGCAGGCGGCCAAAACATGGCTCACCTG 292 cricciscicicides accese canda a contra c CATTATCCCACAATGCAGGAGAGCAGCGAAGGTGATGAGGTATAGGGAGAAGAGGAAG AGGCGCCCTATGACAAGCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGG CCATGGGTCAACGGCCGCTTTGTCAAGGTACCCGAAGCCATGGCATCGCCATCATCTCCCA 109 ATGTCCATGTCATGCGGTTTTGTGCGGCGCCAACAACTGCCCGGGCCTCATGGTCTCGCCC GGGAACAGCAGCAGCTCACGCTGGAGGTGGGCGCAGGCGGCCAACACATGCCTCACCTA <u> agcactartragcaargacaacaarcargacrarrgaracagaagargarggragggcracc</u> TCGGCCATTGCCACCACCAGCAGATCATGGACCACCACCGTTTCATGAAACAGCAGCTGCA GTGCAGCCACCGG-----CAAGAGCCCACATCGTGCCATTTCACGGAGGTGCATTCACC 15; Length 639; Sequence 639 BP; 162 A; 197 C; 171 G; 109 T; 0 U; 0 Other; Indels GCTTCGCCCTATGATCCTAGTAAACTTCACCTCGGATGGTTCCGGTA GCTTCGCCCTATGATCCTAGTAAACTTCACCTCGGATGGTTCCAGTA Score 445; DB 13; 1 Pred. No. 1.4e-122; 0; Mismatches 95; ADS19586 standard; DNA; 3454 tch 44.7%; al Similarity 83.0%; 537; Conservative sequence. 229 112 289 172 349 352 412 583 532 61 409 463 523 643 703 Query Match Best Local (RESULT 9
ADS19586
ID ADS1
XX
AC ADS1 8888888888888888888 à 셤 ò 셤 ò g ò g ò g 셤 셤 ò g ò à ò

348

231

228 111 288 171

9

408

291 462 351 522 411 582 471 642

2944

2962

795

3000

915

975

855

```
3001 regeságsagritárgritástrításártátásásásárcasásácasárcasasas 3060
                                                                                                                                                                                                                                                                                                                                                                                                                                                   3061 TATTIGITGAAACAAGIATIGITATGCITIATGTTAATITAAGCAIGTAGITIGAGAGG 3120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The invention relates to a recombinant ZCCTI protein (Zn finger and CCT domain protein) coding sequence comprising a nucleic acid that hybridises to the barley ZCCTI cDNA appearing as ADS1977. The patent also discloses the identification of to genes, vrnl identified as ADI (APETALAI) and vrn2 identified as ZCCTI controlling vernalisation of flowering in have been localised to chromosome Sa of one grained wheat, Triticum monococcum. ZCCTI is the repressor of ADI whose promoter contains a binding alte for ZCCTI termed the CAKE Dox. Also included are a vector comprising the recombinant ZCCTI protein coding sequence above, a cell comprising the vector, a transgenic plant comprising the recombinant
                                                                                                                                                                                                                                                                         -----trcatcaagtaaataagttgttattgtccga
                                                                                                                                                                                                                                                                                                                                                                                                                       TATTTATTGAAACAAGTCTTGTTATACTACGTGTTGATTTTAAACATGTAATTTCAAGAGG
                         GAAGCCATGGCATCGCCATCTCCCAGCTTCGCCCTATGATCCTAGTAAACTTCACCTC
                                                                885 GAAGCCGCTGCATCGTCACCCCCAGCTTCGCCTATGATCCTAGTAAACTTCACCTC
                                                                                                                         GGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAACATATTTCCTTCTGAT
                                                                                                                                                                                                                                                                                                                        TTGGAGCCATTATGTTGACTTGACTATTTAAAATGGTCAGCAGATCAAATCAAAATG
                                                                                                                                                                                                                        New recombinant ZCCT1 protein coding sequence useful for altering a plant's (e.g., wheat, barley, rye, oats, or forage grasses) response vernalization or flowering times.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               One grained wheat; chromosome Sa; ds; APETALA1; AP1; vernalisation; flowering; ZCCT1; ZCCT2; vrn1; vrn2; CArG box; plant; gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              One grained wheat DV92 ZCCT2 genomic DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Disclosure; SEQ ID NO 81; 115pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dubcovsky J, Yan L, Loukoianov A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3121 CTAGCTACTTAGATGTGT 3138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADS19583 standard; DNA; 5734 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      976 ATAGCTACTTTGATGTGT 993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11-APR-2003; 2003US-00412137.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26-NOV-2003; 2003US-00723947.
                                                                                                                                                                          2945 GGATGGTTCCGGTAGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2004-728059/71.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Triticum monococcum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P-PSDB; ADS19585.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US2004205848-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (REGC ) UNIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-DEC-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-OCT-2004
                                                                                                                         736 (
                                                                                                                                                                                                                                                                         2963
                                                                                                                                                                                                                                                                                                                                                                                                                         916
                            919
                                                                                                                                                                                                                                                                                                                          928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADS19583;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 10
ADS19583
                                                                                                                                                                     d
                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The invention relates to a recombinant ZCCTI protein (Zn finger and CCT domain protein) coding sequence comprising a nucleic acid that hybridises to the barley ZCCTI cDNA appearing as ABS19577. The patent also discloses the identification of to genes, vani identified as API (APPTALAI) and vani identified as API (APPTALAI) and vani identified as ZCCTI also has a duplicate gene ZCCT2, all three genes have been localised to chromosome a of one grained wheat, Triticum monococcum. ZCCT1 is the repressor of API whose promoter contains a monococcum. ZCCT1 is the repressor of API whose promoter contains a binding site for ZCCT1 termed the CATG box. Also included are a vector comprising the recombinant ZCCT1 protein coding sequence above, a cell comprising the vector, a transgenic plant comprising the recombinant accomplisation of API), a seed from the transgenic plant, a method for altering a plant's response to vernalisation and a molecular marker for virz derived from ADS19577. The genetic construct is a nitherference RNA construct that inhibits ZCCT1 activity and comprises an antisense construct that inhibits ZCCT1 activity and sequence encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P852 TCCAGAAAAGCTTACGCCGAGGCCACGGGTCAATGGCCGCTTTGTCAAGGTACCA 2884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a repression defective ZCCTI protein operably linked to a promoter or a nucleic acid sequence encoding a DNA binding defective ZCCTI protein operably linked to a promoter. The present sequence is a plant ZCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New recombinant ZCCTl protein coding sequence useful for altering a plant's (e.g., wheat, barley, rye, oats, or forage grasses) response to vernalization or flowering times.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GACACAGAGATGATGGTGGGGCCTGCCCATTATCCCACAATGCAGGAGAGAGCAGCGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGATGAGGTATAGGGAGAAGAGGAAGAGGCGCGCGCTATGACAAGCAAATCCGATACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2765 GTGATGAGGTACAGGGAGAAGAGGAGGGGGGTGCTATGACAAGCAAATCCGCTATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTATT
                                                                                                 emmer wheat; ds; APETALA1; AP1; vernalisation; flowering; ZCCT1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 320.8; DB 13; Length 3454;
Pred. No. 6.8e-85;
0; Mismatches 62; Indels 64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Seguence 3454 BP; 962 A; 796 C; 716 G; 980 T; 0 U; 0 Other;
                                                (tetrapolid) wheat ZCCT2 genomic DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Disclosure; SEQ ID NO 84; 115pp; English
                                                                                                                           CArG box; plant; gene
                                                                                                                                                                       Triticum turgidum; subsp. dicoccoides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Loukoianov A;
                                                                                                                                                                                                                                                                                                                          26-NOV-2003; 2003US-00723947
                                                                                                                                                                                                                                                                                                                                                                         11-APR-2003; 2003US-00412137.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      32.2%;
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       432; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                       (REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Dubcovsky J, Yan L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2004-728059/71.
                                                                                                                           ZCCT2; vrn1; vrn2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sest Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P-PSDB; ADS19588
                                                                                                                                                                                                                        JS2004205848-A1
                                                                                                                                                                                                                                                                         14-OCT-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                   Langdon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                 Wild
```

S

셤 8 В ò a ઠે g

ò

US2004205848-A1

14-0CT-2004

```
4420
                                                                                                                                                                                                                                                                                                     4064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1245 GAAGCCGCTGCATCGTCGTCACCCCCAGCTTCGCCCTATGATCCTAGTAACTTCACCTC 4304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4480
                                                                                                                                                                                                                                                                                                                                                                 4125 GTGATGAGGTACAGGGAGAAGAGGAAGAGGGGGTGCTATGACAAGCAAATCCGCTACGAG 4184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                915
ZCCT1 protein coding sequence above (or a genetic construct that inhibits ZCCT1 repression of API), a seed from the transgenic plant, a method for altering a plant's response to vernalisation and a molecular marker for Vrn2 derived from ADS19577. The genetic construct is an interference RNA construct (RNA) that inhibits ZCCT1 activity and comprises an antisense construct that inhibits ZCCT1 activity, a nucleic acid sequence encoding a repression defective ZCCT1 protein operably linked to a promoter or a nucleic acid sequence encoding a plant sequence is a plant zccT genomic DNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                   615
                                                                                                                                                                                                                                                                                                                                                                                                                                                             675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAACATATTTCCTTCTGAT 795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ------Treatcaaagraaarraagraagragrrarrgarcea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4361 CGGGAGGAGTTATGTTTTGACTATTTCAAAAGGTCAGCAAACCAATCAAAGAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATTTATTGAAACAAGTCTTGTTATACTACGTGTTGATTTTAAACATGTAATTTCAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGCCATTCTGCGGGCTGCATTCACCAGCACTATTAGCAATGCAACAATCATGACTATT
                                                                                                                                                                                                                                                                                                                                    GACACAGAGATGATGGTGGGGCCTGCCCATTATCCCACAATGCAGGAGAGAGCAGCAGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                   GTGATGAGGTATAGGGAGAAGAGGAAGAGGCGGCGCTATGACAAGCAAATCCGATACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTATT
                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                        64;
                                                                                                                                                                           Sequence 5734 BP; 1563 A; 1278 C; 1220 G; 1673 T; 0 U; 0 Other;
                                                                                                                                                                                                           Length 5734;
                                                                                                                                                                                                                                        62; Indels
                                                                                                                                                                                                        Score 320.8; DB 13;
Pred. No. 9e-85;
0; Mismatches 62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADS19592 standard; DNA; 2043
                                                                                                                                                                                                        Query Match
Best Local Similarity 77.4%;
Matches 432; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4305 ggargerrecagragrir-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          976 ATAGCTACTTTGATGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       craccractracarcter
                                                                                                                                                                                                                                                                                                                                                                   4065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4481
                                                                                                                                                                                                                                                                        436
                                                                                                                                                                                                                                                                                                                                      496
                                                                                                                                                                                                                                                                                                                                                                                                   556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8888888888888888
                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
```

ds; APETALA1; AP1; vernalisation; flowering; ZCCT1; ZCCT2; vrn1;

Winter barley ZCCT-Hb genomic DNA

(first entry)

30-DEC-2004

vrn2; CArG box; plant; gene.

Barley;

Hordeum vulgare

```
1854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2034
                                                                                                                                                                                                                                                                                                                                                              The invention relates to a recombinant ZCCT1 protein (Zn finger and CCT domain protein) coding sequence comprising a nucleic acid that hybridises to the barley ZCCT1 CDNA appearing as ABS19577. The patent also discloses the identification of to appearing as ABS19577. The patent also discloses vrn2 identified as ZCCT1 controlling vernalisation of flowering in temperate grasses. ZCCT1 also has a duplicate gene ZCCT2, all three genes have been localised to chromosome Sa of one grained wheat. Triticum monococcum. ZCCT1 is the repressor of AP1 whose promoter contains a binding site for ZCCT1 termed the CArG box. Also included are a vector comprising the recombinant ZCCT1 protein coding sequence above, a cell zCCT1 repression of AP1), a seed from the transgenic plant, a method for a genetic construct that inhibits
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                altering a plant's response to vernalisation and a molecular marker for Vrn2 derived from ADS19577. The genetic construct is an interference RNA construct (RNA) that inhibits ZCCT1 activity and comprises an antisense construct that inhibits ZCCT1 activity, a nucleic acid sequence encoding a repression defective ZCCT1 protein operably linked to a promoter or a nucleic acid sequence encoding a nucleic acid sequence encoding a DNA binding defective ZCCT1 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATACAGAGATGATGGCGGGGACTGCCTATAGTCCAACGATGCAGGAAAGAGAAGCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGATGAGGTATAGGGAGAAGAGGAGGCGCGCGCTATGACAAGCAAATCCGATACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCAGAAAAGCTTACGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAGCCATGGCCATCCATCTCCCAGCTTCGCCCTATGATCCTAGTAAACTTCACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GACACAGAGATGATGGTGGGGCCTGCCCATTATCCCACAATGCAGGAGAGAGCAGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rccagaaaagcrracgccgagcrraggccacgggrcaacggccgcrrrgrcaaggraccr
                                                                                                                                                                                                                                                           New recombinant ZCCTl protein coding sequence useful for altering a plant's (e.g., wheat, barley, rye, oats, or forage grasses) response vernalization or flowering times.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linked to a promoter. The present sequence is a plant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 2043 BP; 567 A; 495 C; 413 G; 527 T; 0 U; 41 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 251.4; DB 1
Pred. No. 3.5e-64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Mismatches
                                                                                                                                                                                                                                                                                                                                     Disclosure; SEQ ID NO 90; 115pp; English.
                                                                                                                                                                          Ä
                                                                                                                                                                            Loukoianov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   25.2%;
                                                                   2003US-00723947
                                                                                                     11-APR-2003; 2003US-00412137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                       CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGATGGTTC 744
                                                                                                                                                                                                           WPI; 2004-728059/71.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGATGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
les 273; Conserv
                                                                                                                                                                                                                              P-PSDB; ADS19594.
                                                                   26-NOV-2003;
                                                                                                                                       (REGC ) UNIV
                                                                                                                                                                          Dubcovsky J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              operably
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    556
셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
```

```
GC 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          402004081210-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Oryza sativa
                                                                                                                                                                                                                                                                                                                                                                                                     16-DEC-2004
                                                                                                                                                                                                                                                                              - U
                                                                                                                    465
                                                                                                                                                                                                                                                                                                                                                                         ADS16780;
                                        184
                                                                 411
                                                                                             244
                                                                                                                                              301
                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                       RESULT 13
                                                                                                                                                                                                                                                                                                                                       ADS16780
                                                              <del>Q</del>
                                                                                                             셤
                                                                                                                                        ð
                                                                                                                                                                     엄
                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                          à
                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention relates to a recombinant ZCCT1 protein (In finger and CCT domain protein) coding sequence comprising a nucleic acid that hybridises to the barley ZCCT1 cDNA appearing as ADS1957. The patent also discloses the identification of to genes, vunl identified as API (APETALA) and vunl identified as ZCCT1 controlling vernalisation of flowering in temperate grasses. ZCCT1 also has a duplicate gene ZCCT2, all three genes have been localised to chromosome Sa of one grained wheat, Triticum monococcum. ZCCT1 termed the CAPC box. Also included are a vector comprising the recombinant ZCCT1 protein coding sequence above, a cell comprising the vector, a transgenic plant comprising the vector a transgenic plant comprising the vector. Transgenic plant comprising the vector a transgenic plant comprising the vector. Transgenic plant transgenic plant inhibits ZCCT1 protein coding sequence above (or a genetic construct that inhibits ZCCT1 repression of API), a seed from the transgenic plant, a method for altering a plant's response to vernalisation and a molecular marker for Vrn2 derived from ADS19577. The genetic construct is an interference RNA construct that inhibits ZCCT1 activity and comprises an antisense construct that inhibits ZCCT1 activity, a nucleic acid sequence encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    63
                                                                                                                                 Barley; ds; APETALA1; AP1; vernalisation; flowering; ZCCT1; ZCCT2; vrn1;
                                                                                                                                                                                                                                                                                                                                                                                                    New recombinant ZCCTl protein coding sequence useful for altering a plant's (e.g., wheat, barley, rye, oats, or forage grasses) response to vernalization or flowering times.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   promoter or a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        238 CTGTCTTCTTCTTCGACATCTCTCTCCACG-----CACCAGACCACAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCTCGACGTCTCCTCCTCGGCTCCTCCACGCCCAGACCACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a repression defective ZCCTl protein operably linked to a promo nucleic acid sequence encoding a DNA binding defective ZCCTl properably linked to a promoter. The present sequence is a plant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 13; Length 1985;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 1985 BP; 572 A; 489 C; 393 G; 531 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 247.6; DB 13;
Pred. No. 4.8e-63;
0; Mismatches 64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; SEQ ID NO 87; 115pp; English
                                                                                                                                                                                                                                                                                                                                       Loukoianov A;
                                                                                                       Winter barley ZCCT-Ha genomic DNA
                         ADS19589 standard; DNA; 1985
                                                                                                                                                                                                                                                     26-NOV-2003; 2003US-00723947
                                                                                                                                                                                                                                                                                  11-APR-2003; 2003US-00412137.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ouery Match 24.9%;
Best Local Similarity 81.0%;
Matches 342; Conservative (
                                                                                                                                              vrn2; CArG box; plant; gene.
                                                                             (first entry)
                                                                                                                                                                                                                                                                                                         (REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                                                                                                                                                    Yan L,
                                                                                                                                                                                                                                                                                                                                                              WPI; 2004-728059/71
                                                                                                                                                                                                                                                                                                                                                                            P-PSDB; ADS19591.
                                                                                                                                                                        Hordeum vulgare
                                                                                                                                                                                                 JS2004205848-A1
                                                                                                                                                                                                                                                                                                                                     Dubcovsky J,
                                                                             30-DEC-2004
                                                                                                                                                                                                                           14-OCT-2004
                                                    ADS19589;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              292
RESULT 12
ADS19589
                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
```

```
410
                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This invention relates to a novel DNA, designated Lhd4 and encoding a protein capable of delaying flowering in a plant. The invention is useful for delaying flowering of a plant, which comprises expressing the novel DNA within the cells of a plant, such as rice. The Lhd4 protein enables control of flowering time of a plant, such as rice, thus causing efficient development and growth of an excellent variety. The present sequence is an Oryza sativa CDNA sequence which is claimed in the
                                                              243
                                                                                                                         464
                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                644
                                                                                                                                                                                                                                                  524
                                                                                                                                                                                                                                                                                                                                                                           584
351 GGTTTGTGCGGCGCCAGCAACTGCGCGTACCACATGATGTCGCCCCGTTCTTCATCAT
                                                              CACCATCATCAGGAGCACCAGCTGTGTGAGTACCAGTTCTTCGCCCATGGCAACCACCAC
                                                                                                                                                                                       CACCACCACCATGGCTCGGCAGCAGCTACCCAGTGCCACCG---CCGCCAGACAACTTC
                                                                                                                                                                                                                           GACCACCGCAGAACATGGACCAGACCATTTCATGAAACAGCAGCGCAGGGAACAGCAGC
                                                                                                                                                                                                                                                                                                                                                                           525 CACCACCACAGATCATGGACCACGCCGTTTCATGAAACAGCAGCTCCAGAGAACAGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGCTCACGCTGGAGGTGGGCGCAGGCGGCCAACACACATGGCTCACCTAGTGCAGCCACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                585 AGGCTCACACGGGAGGTGGACGCAGGCGACCACATGGCTCACCTGCTGCAGCACCC
                                                                                                                     caccarcarcaggaacaccacrgcacgagraccagrrcrrcgcccaagg-----rcac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .
/*tag= a
/product= "Lhd4-related Oryza sativa protein SegID3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New gene Lhd4 encoding a protein capable of delaying flowering in plant, useful for controlling flowering time in rice.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Yano
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Lhd4, plant flowering, flowering time, efficient development, rice growth; gene; 88.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Masuda H,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Lhd4-related Oryza sativa cDNA sequence SegID2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Maehara Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CO LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 1; SEQ ID NO 2; 124pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
216. .989
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (PLAN-) PLANT GENOME CENT CO LTD. (PLAN-) PLANT FUNCTIONAL GENOMICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kitazawa N,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADS16780 standard; cDNA; 1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10-MAR-2004; 2004WO-JP003122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .0-MAR-2003; 2003JP-00063960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                winobe Y, Monna L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2004-677545/66.
P-PSDB; ADS16781.
```

```
Local Similarity
 Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                 rice
                                                                                                                                                                                                                                                                            RESULT 15
                                                                                                                                                                                                                                                                                           ADS16783
                                        ò
                                                                 셤
                                                                                              ò
                                                                                                                      원
                                                                                                                                                   ò
                                                                                                                                                                             셤
                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                 g
                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This invention relates to a novel DNA, designated Lhd4 and encoding a protein capable of delaying flowering in a plant. The invention is useful for delaying flowering of a plant, which comprises expressing the novel DNA within the cells of a plant, such as rice. The Lhd4 protein enables control of flowering time of a plant, such as rice, thus causing efficient development and growth of an excellent variety. The present sequence is an Oryza sativa CDNA sequence which is claimed in the
                                                                                                                              CCCAATGGTGGAGGGAGGCCCAAGCTGATGAGGTACAAGGAGAAGAAGAAGAAGTG 829
                                                                                                                                                                650
                                                                                                                                                                                           889
                                                                                                                                                                                                                                                949
                                                                                                                                                                                                                       CAACGGCCGCTTTGTCAAGGTACCCGAAGCCATGGCATCGCCATCATCTCCCAGCTTCGCC 710
                                                                                                                                                                              GAGAGGTCGCTTCGCCAAAGAACCTGATCAGGAAGCTGTCGCACCGCCATCCACCTATGT
                                                                                                           CACAATGCAGGAGAGCAGCGGAAGGTGATGAGGTATAGGGGAAGAAGAGGGGGGG
                                                                                                                                                                CTATGACAAGCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ಡ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New gene Lhd4 encoding a protein capable of delaying flowering in plant, useful for controlling flowering time in rice.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yano M;
                                                                                ;
0
                                                                                                                                                                                                                                                                            CTATGATCCTAGTAAACTTCACCTCGGATGGTTCCGGTAATTTATAGCA 759
                                                                                                                                                                                                                                                                                                     Lhd4; plant flowering; flowering time; efficient development; rice growth; gene; ss.
                                                       Length 1078;
                           Sequence 1078 BP; 223 A; 309 C; 317 G; 229 T; 0 U; 0 Other;
                                                                                85; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Masuda H,
                                                     Score 93; DB 13;
Pred. No. 9.1e-17;
0; Mismatches 85;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Lhd4-related Oryza sativa cDNA sequence SeqID8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kitazawa N, Maehara Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PLANT GENOME CENT CO LTD.
PLANT FUNCTIONAL GENOMICS CO LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 4; SEQ ID NO 8; 124pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                          BP.
                                                                                                                                                                                                                                                                                                                                                                       ADS16786 standard; cDNA; 1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10-MAR-2004; 2004WO-JP003122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10-MAR-2003; 2003JP-00063960
                                                     Query Match 9.3%;
Best Local Similarity 62.9%;
Matches 144; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Minobe Y, Monna L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2004-677545/66.
P-PSDB; ADS16787.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO2004081210-A1
specification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Oryza sativa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23-SEP-2004.
                                                                                                                                                                                                                                                                                                                                                                                                                              16-DEC-2004
                                                                                                           531
                                                                                                                                                                591
                                                                                                                                                                                          830
                                                                                                                                                                                                                     651
                                                                                                                                                                                                                                                890
                                                                                                                                                                                                                                                                             711
                                                                                                                                                                                                                                                                                                     950
                                                                                                                                                                                                                                                                                                                                                                                                   ADS16786;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PLAN-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (PLAN-)
                                                                                                                                                                                                                                                                                                                                             RESULT 14
ADS16786
ID ADS1
 SXS
                                                                                                                                   셤
                                                                                                                                                               ò
                                                                                                                                                                                       원
                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                          ò
```

```
650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This invention relates to a novel DNA, designated Lhd4 and encoding a protein capable of delaying flowering in a plant. The invention is useful for delaying flowering of a plant, which comprises expressing the novel DNA within the cells of a plant, such as rice. The Lhd4 protein enables control of flowering time of a plant, such as rice, thus causing sequence is that of an growth of an excellent variety. The present exemplification of the invention.
                                                590
                                                                                                                                                  830 CTACGAGAAGCAAATCCGGTACGCGTCCAGAAAGCCTATGCCGAGATGAGGCCCCGAGT 889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       590
                                                                                651 CAACGGCCGCTTTGTCAAGGTACCCGAAGCCATGGCATCGCCATCATCTCCAGCTTCGCC 710
                                                                                                                                                                                                                   890 GAGAGGTCGCTTCGCCAAAGAACCTGATCAGGAAGCTGTCGCACCGCCATCCACCTATGT 949
                                                591 CTATGACAAGCAAATCCGATACGAGTCCAGAAAAGCTTAACGCTGAGCTTCGGCCATGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     531 CACAATGCAGGAGAGCAGCGAAGGTGATGAGGTATAGGGAGAAGAGGAAGAGGCGGCG
                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New gene Lhd4 encoding a protein capable of delaying flowering in plant, useful for controlling flowering time in rice.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ξ
                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                   950 cgarccragradgerreagerregacaardgerreagaragaraarraca 998
                                                                                                                                                                                                                                                    711 CTATGATCCTAGTAAACTTCACCTCGGATGGTTCCGGTAATTTATAGCA 759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Yano
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lhd4; plant flowering; flowering time; efficient development;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1078;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1078 BP; 224 A; 309 C; 317 G; 228 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 93; DB 13; Length Lu
Pred. No. 9.16-17;
               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Masuda H,
 Pred. No. 9.1e-17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Lhd4-related Oryza sativa cDNA sequence SeqID5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Minobe Y, Monna L, Kitazawa N, Maehara Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (PLAN-) PLANT GENOME CENT CO LTD.
(PLAN-) PLANT FUNCTIONAL GENOMICS CO LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Example 1; SEQ ID NO 5; 124pp; Japanese.
                   ö
                                                                                                                                                                                                                                                                                                                                                                     ADS16783 standard; cDNA; 1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10-MAR-2004; 2004WO-JP003122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10-MAR-2003; 2003JP-00063960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 62.9%;
Matches 144; Conservative
al Similarity 62.9%;
144; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            growth; gene; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2004-677545/66.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P-PSDB; ADS16784.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO2004081210-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Oryza sativa
                                                                                                                                                                                                                                                                                                                                                                                                                                        16-DEC-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          23-SEP-2004
                                                                                                                                                                                                                                                                                                                                                                                                       ADS16783;
                                                                                                                                                                                                                                                                                                                                                                                                        8
```

ö

DB 13; Length 1078;

Score 93;

9.38;

Query Match

Sequence 1078 BP; 224 A; 309 C; 316 G; 229 T; 0 U; 0 Other;

specification

```
591 CTATGACAAGCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGT 650
                                                                                           651 CAACGGCCGCTTTGTCAAGGTACCCGAAGCCATGGCATCGCCATCATCTCCAGCTTCGCC 710
                                                                                                                   890 GAGAGGTCGCTTCGCCAAAGAACCTGATCAGGAAGCTGTCGCACCGCATCCACCTATGT 949
770 CGCAATGGTGGAGAGGGGAGGCCAAGCTGATGAGGTACAAGGAGAAGAAGAAGAAGAAGAGGTG 829
                                                     711 CTATGATCCTAGTAAACTTCACCTCGGATGGTTCCGGTAATTTATAGCA 759
                                                                                                                                                                                  g
                                                                                                                                                            ò
                                                                                                                                                                                      q
                                                                                       ò
ద
                             ò
                                                            В
```

Search completed: February 23, 2006, 12:16:19 Job time : 719 secs

8, Appli 8, Appli 16939, A 16039, A 12212, A 16471, A 16471, A 14319, A

Sequence Seq

Sequence 12060, A Sequence 16618, A Sequence 16212, A Sequence 16471, A Sequence 16477, A Sequence 17201, A Sequence 224, Appl Sequence 224, Appl Sequence 12238, Sequence 10, Appl

12369, 12440,

Sequence 672, Sequence 1236

Sequence Sequence

Seguence

Sequence

Minimum DB Maximum DB

Database

Result õ

0 0 0 0 0

Searched:

OM nucleic

.. 0

Sequence:

Title:

```
15 ggacadgggaagcgagggrccrgaggracagggagagaggaggagaggaggragrrcgagaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             600 GCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       75 caccarcacaracecricececadeceraceceanacececececececearenae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 327, Application US/09640211A

Fatent No. 6833446

GENERAL INFORMATION:
APPLICANT: Wood, Marion
APPLICANT: McGrath, Annette
APPLICANT: Glenn, Matthew
TITLE OF INVENTION: Compositions and Methods for the
TITLE OF INVENTION: Modification of Gene Transcription
FILE REPERENCE: 11000.1021G1U
CURRENT APPLICANTON NUMBER: US/09/640,211A

WITHERENT FILING DATE: 2000-08-16
                                                                                                                           US-09-145-916-4
US-09-949-016-14319
US-09-949-016-37001
US-09-949-016-122238
US-09-676-610B-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1, Application US/08945056
Patent No. 6077994
GENERAL INFORMATION:
APPLICANT: Coupland, George M.
APPLICANT: Putterill, Joanna J.
TITLE OF INVENTION: Genetic control of flowering
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 65.4; DB 3;
Pred. No. 1.7e-09;
0; Mismatches 51;
                                                     US-09-949-016-12060
US-09-949-016-16618
US-09-949-016-12212
                                                                                                 US-09-949-016-16971
US-09-949-016-16477
                                                                                                                                                                                                                                                                -09-949-016-12440
                                                                                                                                                                                                                                                                               US-09-949-016-14162
                                                                                                                                                                                                                                                                                            US-09-949-016-14163
                                                                                                                                                                                                   US-09-877-177A-10
US-08-956-171E-672
                                                                                                                                                                                                                                  US-08-781-986A-672
                                                                                                                                                                                                                                                                                                                                        ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQ ID NOS: 2368
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       660 CTTTGTCAAGGTACCCGAAGCCATGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTTCGCGAAGCGCGCCGACATCGAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 65.3%;
Matches 96; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; TYPE: DNA; ORGANISM: Eucalyptus grandis
US-09-640-211A-327
                                                                                                                                                                                     169998
197496
2222
            18597
18597
67626
106929
106929
97195
97196
72549
1079
uuuuuuuuu
                                                                                                                                                                                                                                                                                                                                                                                                  US-09-640-211A-327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-945-056-1
                                                                                                                                                                                                                  40.6
40.2
40.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14327, A
11, Appl
15127, A
12705, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 12371, A
Sequence 103758,
Sequence 14613, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2052, A
, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17550, A
                                                                                                ; Search time 197 Seconds
(without alignments)
8987.063 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12801,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 13845,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 327,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1
Sequence 1
Sequence 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                        1 taactgcctcttcttcttcc......tagctactttgatgtgtaat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
            GenCore version 5.1.7
Copyright (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                        /cgn2_6/ptodata/1/ina/1_COMB.seq:*
/cgn2_6/ptodata/1/ina/5_COMB.seq:*
/cgn2_6/ptodata/1/ina/6A_COMB.seq:*
/cgn2_6/ptodata/1/ina/6B_COMB.seq:*
/cgn2_6/ptodata/1/ina/H_COMB.seq:*
/cgn2_6/ptodata/1/ina/H_COMB.seq:*
/cgn2_6/ptodata/1/ina/PCTUS_COMB.seq:*
/cgn2_6/ptodata/1/ina/PP_COMB.seq:*
/cgn2_6/ptodata/1/ina/PP_COMB.seq:*
/cgn2_6/ptodata/1/ina/RE_COMB.seq:*
/cgn2_6/ptodata/1/ina/RE_COMB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-945-056-1
US-08-945-056-4
US-08-945-056-5
US-08-945-056-7
US-09-949-016-13345
US-09-949-016-13371
US-09-949-016-14613
US-09-949-016-1252
US-09-949-016-1255
US-09-949-016-13384
US-09-949-016-12384
US-09-949-016-12384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      09-949-016-121282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -09-949-016-12801
-09-949-016-14326
-09-949-016-14327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .09-949-016-15127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -09-949-016-17550
                                                                                                                                                                                                                                                                                          Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JS-09-577-266-11
                                                                                                                                                                                                                                                                1303057 segs, 888780828 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUMMARIES
                                                                                                 2006, 11:58:33
                                                                                                                                                                                                                                                                                                                                                                   Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                      - nucleic search, using sw model
                                                                                                                                                                                                                    IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                             Patents NA:*
                                                                                                                                                                                                                                                                                                                          seq length: 0
seq length: 200000000
                                                                                                                                                          US-10-723-947-75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1101
7218
152132
152145
30656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          34230
114793
128470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        142783
271134
305491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18596
18596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     39154
39154
                                                                                                 Pebruary 23,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              39443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  39443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         601
                                                                                                                                                                                                                                                                                                                                                                                                                               Issued
                                                                                                                                                                                                                                                                                                                                                                      Post-processing:
                                                                                                                                                                           Perfect score:
                                                                                                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      58.8
57.2
47.2
45.6
45.6
45.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 44444444

66664444444

66664444444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     43.6
```

ö

Gaps

..

Indels

Length 448,

```
COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-945-056-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       972 GACAATAAGGTATGCTTCGAGGAAGGCATATGCAGAGATAAGACCGCGGGTCAATGGCCG 1031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             912 GGACAGAGAAAGCCAGGGTCCTGAGATACAGAGAAGAGGAAGAAGACAAGGAAATTTGAGAA 971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           600 GCAAATCCGATACGAGTCCAGAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCG 659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               540 GGAGAGAGCAGCGAAGGTGATGAGGTATAGGGAGAAGAGGAGAGAGGCGGCGCTATGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6.3%; Score 62.8; DB 3; Length 1124; 67.7%; Pred. No. 1.8e-08;
                                                                 CITY: Arlington
STATE: Virginia states of America
COUNTRY: United States of America
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: ParentIn Release #1.0, Version #1.25 (EPO)
CURRENT APPLICATION DATA
TO APPLICATION DATA
TO APPLICATION DATA
CORRESPONDENCE ADDRESS:
ADDRESSEE: Nixon & Vanderhye PC
STREET: 8th Floor, 1100 No. 6077994th Glebe Road

    Joanna J.
Genetic control of flowering

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                                                       PAPLICATION NUMBER: US/08/945,056
FILING DATE: 20-OCT-1997
CLASSIFICATION: 800
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/GB95/02561
FILING DATE: 01-NOV-1995
PRIOR APPLICATION NUMBER: GP7/GB95/02561
FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POSITION IN GENOME: CHROMOSOME/SEGMENT: Chromosome 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 4, Application US/08945056 Patent No. 6077994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: Coupland, George M.
APPLICANT: Putterill, Joanna J
TITLE OF INVENTION: Genetic co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDNA to mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (703) 816-4000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION FOR SEQ ID NO: 1
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1124 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ms Mary J Wilson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1032 Grrcccaaas 1041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        660 CTTTGTCAAG 669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1..1119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 88; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGICAL CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGINAL SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           , NAME/KEY:
, LOCATION:
US-08-945-056-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM:
```

```
3819 GGACAGAGAAGCCAGGGTCCTGAGATACAGAGAAGAGGAAGACAAGGAAATTTGAGAA 3878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3879 GACAATAAGGTATGCTTCGAGGAAGGCATATGCAGAGATAAGACCGCGGGTCAATGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    600 GCAAATCCGATACGAGTCCAGAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 3; Length 4201;
                                                                STATE: Virginia
COUNTER: Virginia
COMPUTER READABLE FORM:
MEDIUTER READABLE FORM:
MEDIUT TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PACENTIN Release #1.0, Version #1.25 (EPO)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/945,056
FILING DATE: 20-007-1997
CLASSIFICATION DATA:
APPLICATION NUMBER: PCT/GB95/02561
FILING DATE: 01-NOV-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: GB 9422083.7
FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
3: Nixon & Vanderhye PC
8th Floor, 1100 No. 6077994th Glebe Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              E: Nixon & Vanderhye PC
8th Floor, 1100 No. 6077994th Glebe Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
APPLICANT: Coupland, George M.
APPLICANT: Putterill, Joanna J.
TITLE OF INVENTION: Genetic control of flowering
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
ADDRESSEE: Nixon & Vanderhye PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6.3%; Score 62.8; Dilarity 67.7%; Pred. No. 4e-0 Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Virginia
: United States of America
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 5, Application US/08945056 Patent No. 6077994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: MB Mary J Wilson
REGISTRATION NUMBER: 32,955
REFERENCE/DOCKET NUMBER: 62
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEPHONE: (703) 816-4000
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN: Landsberg erecta POSITION IN GENOME: MAP POSITION: chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4201 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3939 GITCGCAAAG 3948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    660 CTTTGTCAAG 669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity
Matches 88, Conserve
                                                      Arlington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CITY: Arlington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE:
```

```
Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: DORNER, F.
APPLICANT: SCHEIFLINGER, F.
APPLICANT: SCHEIFLINGER, F.
TITLE OF INVENTION: RECOMBINANT FOWLPOX VIRUS
NUMBER OF SEQUENCES: 52
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SSEE: Foley & Lardner
?: 1800 Diagonal Road, Suite 500
Alexandria
                                      CLASSIFICATION: 800
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/GB95/02561
PILING DATE: 01-NOV-1995
PRIOR APPLICATION NUMBER: GB 9422083.7
FILING DATE: 02-NOV-1994
ATONNEY/AGENT INFORMATION:
NAME: ME NALY JW WILBON
REGISTRATION NUMBER: 32,955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           993 GTTTGCAAAGATGAGTGAAACC 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/08/232,463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               660 CITIGICAAGGIACCCGAAGCC 681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY: USA
ZIP: 22313-0299
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 14, Application US/08232463
Patent No. 5670367
                                                                                                                                                                                                                                                                                REFERENCE/DOCKET NUMBER: 6
TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                              TELEPHONE: (703) 816-4000
INFORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
LENGTH: 1101 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
HYPOTHETICAL: YES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 5.7%;
Best Local Similarity 62.7%;
Matches 89; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER:
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1..1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
STREET: 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; LOCATION:
US-08-945-056-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         873 GGACAGAGAAGCTAGAGTCCTGAGATACAGAGAAGAAGAAGAAGAAGAAGAAGAAGTTTGAGAA 932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       600 GCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCG 659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              933 GACAATAAGGTATGCTTCAAGGAAGGCATATGCAGAGAAGACCGAGGATCAATGGACG 992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           540 GGAGAGAGCAGCGAAGGTGATGAGGTATAGGGAGAAGAGGAAGAGGCGGCGCTGATGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 58.8; DB 3; Length 1101;
Pred. No. 3e-07;
0; Mismatches 52; Indels 0
                                      SOFTWARE: Patentin Release #1.0, Version #1.25 (EPO) CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/945,056
FILING DATE: 20-OCT-1997
CLASSIFICATION: 800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25 (EPO)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE: Nixon & Vanderhye PC
STREET: 8th Floor, 1100 No. 6077994th Glebe Road
CITY: Arlington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
APPLICANT: Coupland, George M.
APPLICANT: Putterill, Joanna J.
TITLE OF INVENTION: Genetic control of flowering
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
ADDRESSEE: Nixon & Vanderhye PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Mismatches
                                                                                                                                                                                   PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/GB95/02561
FILING DATE: 01-NOV-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: GB 9422083.7
FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STATE: Virginia
COWUTRY: United States of America
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               993 GTTTGCAAAGATTAGTGAAACC 1014
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    660 CTTTGTCAAGGTACCCGAAGCC 681
                                                                                                                                                                                                                                                                                                                                                      NAME: MS Mary J Wilson
REGISTRATION NUMBER: 32,955
REPERENCE/DOCKET NUMBER: 620-17
TELECOMUNICATION:
TELECPHONE: (703) 816-4000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 7, Application US/08945056
Patent No. 6077994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE: DNA (genomic) HYPOTHETICAL: YES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 5.9%;
Best Local Similarity 63.4%;
Matches 90; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         : 1101 base pairs
nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Brassic napus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1..1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     , NAME/KEY:
, LOCATION:
US-08-945-056-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
```

```
873 GGACAGAGAAGCTAGAGTCCTGAGATACAGAGAAGAAGAAGAAGAAGAAGAAGTTTGAGAA 932
                                                                                                                                                                                                                                                                                                                                                                                    933 GACAATAAGGTATGCTTCAAGGAAGGCATATGCAGAGAAGAAGACCGAGGATAAATGGACG 992
                                                                            Gaps
Length 1101;
```

```
US-09-949-016-103758/c; Sequence 103758, Application US/09949016; Patent No. 6812339; Patent No. 987878ATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4.6%;
                                                                                                                                                                Query Match
Best Local Similarity 54.1%;
Matches 93; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 54.1
Matchés 93; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-949-016-12371/c
                                                                                         ; TYPE: DNA
; ORGANISM: Human
US-09-949-016-13845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-949-016-12371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: DNA ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 9
                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 13845, Application US/09949016
Patent No. 6812339
GENERAL INFORMATION:
APPLICANT: VERYER, J. Craig et al.
TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    370 CTGGAGGTGGGCGCAGGCGCCAACACATGGCTCACCTAGTGCAGCCACCGGCAAGAGCC 429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CACATCGTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATG 489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         610 TACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAG 669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 310 AGAACATGGACCAGACCATTTCATGAAACAGCAGCGGCAGGGAACAGCAGCAGGTCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 7218;
                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 4.8%; Score 47.4; DB 2; Length 7 Best Local Similarity 4.0%; Pred. No. 0.0028; Matches 15; Conservative 207; Mismatches 153; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION NUMBER: US/09/949,016
CURRENT FILING DATE: 2000-04-14
                                                                      EP 91 114 300.
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/07/935,313
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: 60/241,755
PRIOR FILING DATE: 2000-10-20
PRIOR APPLICATION NUMBER: 60/237,768
PRIOR FILING DATE: 2000-10-03
PRIOR APPLICATION NUMBER: 60/231,498
                                                                                                                                                29,768
                                                                                                                                                              REFERENCE/DOCKET NUMBER: 30
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1052 CGACCTGCAGCCAAG 1038
                                                                                                                                                                                                                                      TELEX: 899149
INFORMATION FOR SEQ ID NO: 14
                                                                    APPLICATION NUMBER: EP 91
FILING DATE: 26-AUG-1991
ATTORNEY/AGENT INFORMATION:
NAME: BENT, Stephen A.
REGISTRATION NUMBER: 29,7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTACCCGAAGCCATG 684
                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 7218 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                   (703) 683-4109
                                                                                                                                                                                                                                                                                                                                               TOPOLOGY: linear

IMMEDIATE SOURCE:

CLONE: pTZgpt-F1s

US-08-232-463-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JS-09-949-016-13845/c
                                                                                                                                                                                                      TELEPHONE:
                                                                                                                                                                                                                         TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
```

```
GENERAL INFORMATION:
APPLICANT: VENTER, J. Craig et al.
APPLICANT: VENTER, J. Craig et al.
TILLE OF INVENTION: PILTH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF FILE REPERBNCE: CLOOL307
CURRENT APPLICATION NUMBER: US/09/949,016
CURRENT APPLICATION NUMBER: US/09/949,016
PRIOR APPLICATION NUMBER: 60/241,755
PRIOR PILING DATE: 2000-10-20
PRIOR PILING DATE: 2000-10-20
PRIOR PILING DATE: 2000-10-07
PRIOR FILING DATE: 2000-10-07
PRIOR FILING DATE: 2000-10-09
PRIOR FILING DATE: 2000-10-09
PRIOR FILING DATE: 2000-10-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        198 GCACCAGCTGTGTGAGTACCAGTTCTTCGCCCATGGCAACCACCACCACCACCACCATGG 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        198 GCACCAGCTGTGTGAGTACCAGTTCTTCGCCCATGGCAACCACCACCACCACCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              138 CAACAACTGCCCGCGCCTCATGGTCTCGCCCATTCACCATCATCACCATCATCACGA
                                                                                                                                                                                                                                                                                                                                                              0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  136679 ccaccaccaccáccáccaccarcaccarcaccaccáccáccaccáccáccác 136628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  258 CTCGGCAGCAGACTACCCAGTGCCACCGCCGCCAGACAACTTCGACCACCGC 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     258 CTCGGCAGCAGCTACCCAGTGCCACGCCCCAGACAACTTCGACCACCGC 309
                                                                                                                                                                                                                                              Score 45.6; DB 3; Length 152132;
Pred. No. 0.062;
0; Mismatches 79; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 45.6; DB 3; Length 152145;
Pred. No. 0.062;
0; Mismatches 79; Indels 0;
PRIOR FILING DATE: 2000-09-08
NUMBER OF SEQ ID NOS: 207012
SOFTWARE: PastSEQ for Windows Version 4.0
SEQ ID NO 13845
LENGTH: 152132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQ ID NOS: 207012
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 12371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 12371, Application US/09949016 Patent No. 6812339
```

```
Application US/09949016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 61.2
Matches 71; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA
CORGANISM: Homo sapien
US-10-148-806-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ) ORGANISM: Human
US-09-949-016-12052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JS-10-148-806-3
                                               g
                                                                                                                                        g
                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: VENTER, J. Craig et al.
TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF FILE REFERENCE: CLOO1307
CURRENT APPLICATION NUMBER: US/09/949,016
CURRENT FILING DATE:
    POLYMORPHISMS IN KNOWN GENES ASSOCIATED WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3723 ccarcactaccaccarcacaarcaccagcaccagcaccaacaccarcarcacaaccaccacra 3664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         198 GCACCAGCTGTGTGAGTACCAGTTCTTCGCCCATGGCAACCACCACCACCACCACCATGG 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        138 CAACAACTGCCCGCGCCTCATGGTCTCGCCCATTCACCATCATCATCACCATCATCAGGA 197.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   338 CCACCATCACCATCACTACCATCACCACGACCATTACSACCATCACTACCACCATCACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            398 CCATCACTACCACCATCACAATCACCAGCACCAGCACCAACACCATCACAACCACCACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               138 CAACAACTGCCCGCGCCCTCATGGTCTCGCCCATTCACCATCATCATCATCATCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  258 CTCGGCAGCAGACTACCCAGTGCCACCGCCGCCAGACAACTTCGACCACC 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; DB 3; Length 30656; 0.031;
                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 45.2; DB 3; Length 522;
Pred. No. 0.0027;
0; Mismatches 78; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches
TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GR
TITLE OF INVENTION: WITH HUMAN DISEASE, METH
CURRENT APPLICATION NUMBER: US/09/949,016
CURRENT FILING DATE: 2000-04-14
PRIOR FILING DATE: 2000-10-20
PRIOR FILING DATE: 2000-10-20
PRIOR APPLICATION NUMBER: 60/231,768
PRIOR APPLICATION NUMBER: 60/231,498
PRIOR APPLICATION NUMBER: 60/231,498
PRIOR PILING DATE: 2000-10-03
PRIOR FILING DATE: 2000-09-08
NUMBER OF SEQ ID NOS: 207012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION NUMBER: 60/241,755
PRIOR FILING DATE: 2000-10-20
PRIOR APPLICATION NUMBER: 60/237,768
PRIOR PILING DATE: 2000-10-03
PRIOR PILING DATE: 2000-0-08
PRIOR PILING DATE: 2000-09-08
NUMBER OF SEQ ID NOS: 207012
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 14613
LENGTH: 30656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 45.2;
Pred. No. 0.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 14613, Application US/09949016 Patent No. 6812339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCATION: (1)...(30656)
OTHER INFORMATION: n = A,T,C or G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   54.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 54.1
Matches 92; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 54.1
Matches 92; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE:
NAME/KEY: misc_feature
LOCATION: (1)...(30656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -09-949-016-14613/c
                                                                                                                                                                                                                                                                                                                                            ; TYPE: DNA
; ORGANISM: Human
US-09-949-016-103758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-949-016-14613
                                                                                                                                                                                                                                                                                                                       LENGTH: 522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
```

```
GENERAL INFORMATION:
APPLICANT: VENTER, J. Craig et al.
APPLICANT: VENTER, J. Craig et al.
TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
FILE REFERENCE: CLOO1307
CURRENT APPLICATION NUMBER: US/09/949,016
CURRENT PILING DATE: 2000-04-14
PRIOR APPLICATION NUMBER: 60/241,755
PRIOR FILING DATE: 2000-10-20
PRIOR FILING DATE: 2000-10-20
PRIOR FILING DATE: 2000-10-31
PRIOR FILING DATE: 2000-10-09
PRIOR FILING DATE: 2000-10-09
                                                         3663 CCACCATCACCATCACCATCACCACGACCATTACCACCATCACTACCACCATCACCA 3604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              198 GCACCAGCTGTGTGAGTACCAGTTCTTCGCCCATGGCAACCACCACCACCACCACCATGG 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              140 ACAACTGCCCGCGCCCTCATGGTCTCGCCCATTCACCATCATCATCATCATCATCATCAGGAGC 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      200 ACCAGCTGTGTGAGTACCAGTTCTTCGCCCATGGCAACCACCACCACCACCACCAT 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Gaps
                                                                                                                                                                                                3603 caarcaccaccáccaccaccaaccarcarcacaácacaccaccacraccácc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 3, Application US/10148806

Patent No. 6762042

GENERAL INPORMATION:
APPLICANT: Bai, Chang
APPLICANT: Metzger, Michael
APPLICANT: Liu, Xiaomei
TITLE OF INVENTION: DNA MOLECULES ENCODING HUMAN NHL, A DNA
TITLE OF INVENTION: DNA MOLECULES ENCODING HUMAN NHL, A DNA
TITLE OF INVENTION: DNA MOLECULES ENCODING HUMAN NHL, A DNA
TITLE OF INVENTION: DNA MOLECULES ENCODING HUMAN NHL, A DNA
TITLE OF INVENTION: UNBER: US/10/148,806

FILE REFERENCE: 20585P

CURRENT FALLING DATE: 2002-06-05

PRIOR APPLICATION NUMBER: US/0/69,970

PRIOR FILING DATE: 1999-12-09

NUMBER OF SEQ ID NOS: 38

SOFTWARE: FASELEEQ for Windows Version 4.0

SEQ ID NO 3

LENGTH: 114793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 44; DB 3; Length 34230;
Pred. No. 0.077;
0; Mismatches 45; Indels
                                                                                                                                   258 CTCGGCAGCAGACTACCCAGTGCCACCGCCGCCAGACAACTTCGACCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQ ID NOS: 207012
SOFTWARE: PastSEQ for Windows Version 4.0
SEQ ID NO 12052
LENGTH: 34230
```

0; Gaps

5; DB 3; Length 39154; 0.11; Indels

59;

```
1619 CACCACCACCACCATCATCACCATTGCCACCACCATCACCATCACCACCATCGC 16560
                                                                                                                                                                                                                                                                                                                                                                                                   232 GGCAACCACCACCACCACCACCATGGCTCGGCAGCAGACTACCCAGTGCCACCGCGCCA
                                                                                                                                                                                                                                                                                                                 172 CACCATCATCATCACCATCATCAGGAGCACCAGCTGTGTGAGTACCAGTTCTTCGCCCAT
                                                                                                                                                                                                                                  Score 43.6; DB
Pred. No. 0.11;
0; Mismatches
      FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16559 CACCACCACCACCAC 16542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16559 CACCACCACCACCACCAC 16542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ) OTHER INFORMATION: n = A,T,C or G
US-09-949-016-12801
                                                                                                                                              ; LOCATION: (1)...(39154)
; OTHER INFORMATION: n = A,T,C or
US-09-949-016-12384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   292 GACAACTTCGACCACCGC 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                292 GACAACTICGACCACCGC 309
                                                                                                                                                                                                                                    4.4%;
                                                                                                                                                                                                                             Query Match
Best Local Similarity 57.28
Matches 79; Conservative
    SOFTWARE: FastSEQ for Win
SEQ ID NO 12384
LENGTH: 39154
TYPE: DNA
ORGANISM: Human
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: misc_feature
LOCATION: (1)...(39154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 15
US-09-949-016-12801/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA
ORGANISM: Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURE
                                                                                                                                                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
APPLICANT: VENTER, J. Craig et al.
TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
FILE REFERENCE: CL001307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
APPLICANT: VENTER, J. Craig et al.
TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF FILE REFERENCE: CL001307
                                                                                                                                                                                             138 CAACAACTGCCCGCGCCTCATGGTCTCGCCCATTCACCATCATCATCATCATCAGGA 197
                                                                                                                                                                 198 GCACCAGCTGTGTGAGTACCAGTTCTTCGCCCATGGCAACCACCACCACCACCACCATGG 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCAGCTGTGTGAGTACCAGTTCTTCGCCCATGGCAACCACCACCACCACCACCAT 255
                                             Gaps
                                                                                                                                                                                                                                                                                          258 CTCGGCAGCAGACTACCCAGTGCCACCGCCGCCAGACAACTTCGACCACCGC 309
                                             .;
0
                                             80; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         45; Indels
    Score 44; DB 3;
Pred. No. 0.16;
                                        0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION NUMBER: US/09/949,016
CURRENT FILING DATE: 2000-04-14
PRIOR APPLICATION NUMBER: 60/241,755
PRIOR FILING DATE: 2000-10-20
PRIOR APPLICATION NUMBER: 60/237,768
PRIOR APPLICATION NUMBER: 60/231,498
PRIOR APPLICATION NUMBER: 60/231,498
PRIOR FILING DATE: 2000-09-08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQ ID NOS: 207012
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 44;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION NUMBER: US/09/949,016
CURRENT FILING DATE: 2000-04-14
                                                                                                                                                                                                                                                                                                                                                                                           Sequence 13765, Application US/09949016
Patent No. 6812339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -09-949-016-12384/c
Sequence 12384, Application US/09949016
Patent No. 6812339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION NUMBER: 60/241,755
PRIOR FILING DATE: 2000-10-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION NUMBER: 60/237,768
PRIOR FILING DATE: 2000-10-03
PRIOR APPLICATION NUMBER: 60/231,498
PRIOR FILING DATE: 2000-09-08
Query Match
Best Local Similarity 53.5%;
Matches 92; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match • 4.4
Best Local Similarity 61.2
Matches 71; Conservative
                                                                                                                                                                                                                                                                                                                                                                            JS-09-949-016-13765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; TYPE: DNA
; ORGANISM: Human
US-09-949-016-13765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQ ID NO 13765
                                                                                                                      유
                                                                                                                                                                   ઠે
                                                                                                                                                                                                        쉽
                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
```

```
Patent No. 6812339
GENERAL INFORMATION:
PEPPLICANT: VENTER, J. Craig et al.
TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
FILE REPRENCES: CLOODI307
CURRENT APPLICATION NUMBER: US/09/949,016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16619 CACCACCACCACCATCATCATTGCCACCATCATCACCATCACCATCACCACCATGC 16560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         172 CACCATCATCATCACCATCACAGGAGCACCAGCTGTGTGAGTACCAGTTCTTGGCCCAT 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    232 GGCAACCACCACCACCACCATGGCTCGGCAGCAGACTACCCAGTGCCACCGCCGCCA 291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             59; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ouery Match 4.4%; Score 43.6; DB Best Local Similarity 57.2%; Pred. No. 0.11; Matches 79; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                         PRIOR APPLICATION NUMBER: 60/21,745,016
PRIOR APPLICATION NUMBER: 60/21,755
PRIOR FILING DATE: 2000-10-20
PRIOR FILING DATE: 2000-10-03
PRIOR FILING DATE: 2000-10-03
PRIOR PRIOR DATE: 2000-10-03
PRIOR PRIOR DATE: 2000-09-08
PRIOR FILING DATE: 2000-09-08
Application US/09949016
```

Search completed: February 23, 2006, 12:04:39 Job time : 198 secs

us-10-723-947-75.rni

BX819991 Arabidops BX842081 Arabidops BE03045 ABOBH10 A CX114723 E1090003 CL954823 1805rBice CF954823 1805rBice CF954823 1805rBice CK084516 83110rBic CA59263 Bbhl. pk00 CA592641 Bbhl. pk00 CA592641 Bbhl. pk00 CA592641 Bbhl. pk00 BJ447520 BJ447520 DN178125 H934L155 BF264488 HV CEa000 DN178125 H9341155 BF264488 HV CEa000 DN185034 H03403500 CK05386170 34633rBic AU056338 AU056338 CE668036 OSJNEf16F CF9528212 ZP9Fsice CE684028 OSJNEf16F

ALIGNMENTS

ķ.

```
CNSOARFS
CNSO9Y9F
BE039045
CX114723
CB684050
CL953070
                                                                                                                                                                                                                                                        BJ447520
DN178125
BF264488
DN185034
                                                                                                                                                                                                                                                                                                                                                CB663843
CK036170
                                                                                                                                                                                                                                      CA592641
    υo
                                                                                                                                                                                                                                                                                                          000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CC647520 OCPA002TH
BZ734187 OCFAQ2ZTC
CL012630 ZMMBBD053
CC728227 OGCCYF7TM
CC685002 OCOAS1OTY
CC685002 OCOAS1OTY
CC685002 OCOAS1OTY
CL931360 aof01-5m8
CL972569 OSIFCC023
CL972569 OSIFCC023
CL972569 OSIFCC023
CL97565 ZMMBBD021
CL14906 104 329 1
BZ67381 PUBBI8RTD
DN23819 MUC4141100
CK163737 FGAS01636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FGAS01636
AV805290
AV785412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AV538590
84-L02059
                                                                                                                                         February 23, 2006, 12:00:04; Search time 4762 Seconds (without alignments) 9785.790 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Arabidops
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Description
                                                                                                                                                                                                                                                      996
1 taactgcctcttcttcc......tagctactttgatgtgaat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AV805290 AV785412 AV519830 AV51980 AV519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AV538590 ADR749947 BX841997 A
                                                                                                                                                                                                                                                                                                                                                                                                                                    82156650
                  GenCore version 5.1.7 (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                                                                                                                                                                                    41078325 segs, 23393541228 residues
                                                                                                                                                                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                   OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CC647520

BZ734187

CC1012630

CC728227

CC685007

CC685002

CL93360

CL972569

CL972569

CL972569

CL972569

CL97269

CL97369

CL97369

CL14906

BZ673931

DN23819

CK163737

AV805220

AV805220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AV538590
DR749947
CNS09YA6
                                                                                                                                                                                                                                                                                                                     IDENTITY NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 su
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                 US-10-723-947-75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gb_est7:*
gb_gss1:*
gb_gss2:*
gb_gss3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gb_est5: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            _est3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gb_htc:*
gb_est4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query
Match Length
                                      Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EST:*
                                                                                                                                                                                                                                                      Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               94.8
94.8
94.8
94.8
92.6
91.2
                                                                                                                                                                                                                                                                                                                       Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             888.8
777.2
776.6
76.6
76.6
76.6
76.6
76.6
                                                                                                                                                                                                                                                                                                                                                                                    Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database
                                                                                                                                            Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Result
```

DEFINITION	CC647520 364 bp DNA linear GSS 19-JUN-2003
	H ZM 0.7 1.5 KB Zea mays genomic clone ZMWBN
ACCESSION	CC647520 CC647520 1 21.33040640
KEYWORDS	
ORGANISM	Zea mays
	Bukaryota, Viridiplantae, Streptophyta, Embryophyta; Tracheophyta, Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae, PACCAD clade: Panicoideae, Andropogoneae, Zea.
REFERENCE AUTHORS	1 (bases 1 to 364) Whitelaw C.A., Chackenbush J., Van Aken S., Utterback T.
	Resnick, A., Fraser, C.M., Budiman, M.A., Bedell, J.A., Rohlfing, T.,
TITLE	Circhin for Maize Genomics
JOURNAL	Unpublished (2002)
COMMENT.	Other Gass: OsrACOZIV Contact: Cathy Whitelaw
	9712 Medical Center Drive, Rockville, MD 20850, USA Tel: 301-838-5843
	Fax: 301-838-0208
	Email: whitelaw@tigr.org
	Seg primer: TR
FFATTTEC	Class: methylation filtered.
source	1364
	/organism="Zea mays" /mol_type="genomic DNA"
	/strain="B73"
	/ dD_xret="taxon:45//" /clone="2MMBMa0351B03"
	<pre>/note="Vector: pBCSK-; Site 1: HincII; 0.7-1.5 kb methylation filtered genomic DNA library"</pre>
ORIGIN	
Query Match	Query Match 9.6%; Score 95.8; DB 9; Length 364;
Matches 158;	os.os; vative o

Mon

В

g ò

ò

셤

ò

8

```
DNA linear GSS 29-DEC-2003
Zea mays genomic clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bharti, A.K., Young, S., Kavchok, S., Keizer, G., Bronzino, A.C., Zohovetz, V., Fuks, G., Yu, Y., Wing, R. and Messing, J. Sequencing of the maize genome at PGIR (2003c) Unpublished (2003) Uncoublished (2003) Dr. Joachim Messing's lab

The Plant Genome Initiative at Rutgers, Waksman Institute, Rutgers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  276 GGACCGGGAGGCGAAGGTGATGCGGTACAAGGAGAAGAGGGGAAGAGGGGGGCGCTACGAGAA 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         629
                                                                                                                       372 CGAACCAGGCCGGCTCGGATGGTTCCGTTCATAGCAAAGGCCACTGGTTAAA 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD
clade; Panicoideae; Andropogoneae; Zea.
1 (bases 1 to 1021)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             660 CITIGICAAGGIACCCGAAGCCATGCATCG-----CCATCATCTCCAGCTTCGCCCTA 713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 714 TGATCCTAGTAAACTTCACCTCGGATGGTTCCGGGTAATTTATAGCACAAGCCAGATAAAA 773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        96 CGAACCAGGCCGGCTCGACCTCGGATGGTTCGTTCATAGCAAAGAGGCCACTGGTTAAA 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="taxon:4577"
/clone="zmmBBb0537C10"
/lab_host="E. coll DH10B"
/clone lib="zmmBBb (HindIII)"
/note="vector: pCUGI; Site_1: HindIII; Site_2: HindIII"
                                                                                          714 TGATCCTAGTAAACTTCACCTCGGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  540 GGAGAGAGCAGCGAAGGTGATGAGGTATAGGGAGAAGAGGAAGAGGAGGCGGCGCTATGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         600 GCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCCATGGGTCAACGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           156 chroscoaassiccoasosassassicos cocoscos cocos cocos con con contra con contra con contra con contra cont
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1021;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  University
190 Frelinghuysen Road, Piscataway, NJ 08854,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9.6%; Score 95.8; DB 10;
ilarity 65.6%; Pred. No. 6.5e-15;
Conservative 0; Mismatches 77;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZMMBBb0537C10 3', genomic survey sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tel: 732 445 3801
Pax: 732 445 5735
Emal: bharti@wak8man.rutgers.edu
Seg primer: SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Zea mays"
/mol_type="genomic DNA"
/cultivar="B73"
                                                                                                                                                                                                                                                                                                                                                                                                                                   ZMMBBb0537C10r ZMMBBb (HindIII)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    φ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Class: BAC ends
High quality sequence start:
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GI:40373908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    al Similarity
158; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CL012630
CL012630.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Zea mays
                                                                                                                                                                                                                     774 T 774
                                                                                                                                                                                                                                                                               T 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Si
Matches 158
                                                                                                                                                                                                                                                                               312
                                   432
                                                                                                                                                                                                                                                                                                                                                                   RESULT 3
CL012630/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                             ð
                                                                                                                                          셤
                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                           원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GSS 03-MAR-2003
                                                                                                                                                                                                                                                                           crircaccaaderaceceaedereaedereceaeceaeceaeceaecaecaracra 126
CITIGICAAGGIACCCGAAGCCAIGGCAICG-----CCAICAICICCAGCIICGCCCIA 713
                                                                                                                                                                                                                                                                                                                                            714 TGATCCTAGTAAACTTCACCTCGGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAA 773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae, PACCAD
clade, Panicoideae, Andropogoneae, Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 600 GCAAATCCGATACGAGTCCAGAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCG 659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        660 CTTTGTCAAGGTACCCGAAGCCATGGCATCG----CCATCATCTCCAGCTTCGCCCTA 713
                                                                                                                                                                                                                                                                                                                                                                                                      125 CGAACCAGGCCGGCTCGACCTCGGATGGTTCCGTTCATAGCAAGAGGGCCACTGGTTAAA 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 (bases 1 to 833)
whitelaw,C.A., Quackenbush,J., Van Aken,S., Utterback,T.,
Renick,A., Fraser,C.M., Budiman,M.A., Bedell,J.A., Rohlfing,T.,
Citek,R.W., Nunberg,A., Robbins,D. and Lakey,N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          540 GGAGAGGAGCGGAAGGTGATGAGGTATAGGGAGAAGAGGAAGAGAGGCGCGCCTATGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     833 bp DNA linear GSS 03-MA
OGFAQ22TC ZM 0.7_1.5 KB Zea mays genomic clone ZMMBMa0241Cl9,
genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        쥯
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /db_xrefe"taxon:4577"
/clone="ZMMBMa0241C19"
/clone lib="ZM 0.7_1.5_KB"
/clone lib="ZM 0.7_1.5_KB"
methylation filtered genomic DNA library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ouery Match 9.6%; Score 95.8; DB 9; Length 833; Best Local Similarity 65.6%; Pred. No. 6.1e-15; Matches 158; Conservative 0; Mismatches 77; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9712 Medical Center Drive, Rockville, MD 20850, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Zea mays"
/mol_type="genomic DNA"
/strain="B73"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Consortium for Maize Genomics Unpublished (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Seq primer: TF
Class: methylation filtered.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Fax: 301-838-0208
Email: whitelaw@tigr.org
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Cathy Whitelaw
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GI:28710795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Other_GSS8: OGFAQ22TM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rel: 301-838-5843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BZ734187.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Zea mays
Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BZ734187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   774 T 774
                                                                                             009
                                                                                                                                                                                                                     099
                                                                                                                                                                                                                                                                               185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 2
BZ734187/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
```

ò В ò d ò

```
CC685002 907 bp DNA linear GSS 19-JUN-2003 OGOAS10TH ZM 0.7_1.5_KB Zea mays genomic clone ZMMBMa0340B19, CC685002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  660 CTTTGTCAAGGTACCCGAAG-----CCATGGCATCGCCATCATCTCCAGCTTCGCC 710
                                                        Embryophyta; Tracheophyta;
                                                      Bukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae, PACCAD
clade, Panicoldeae, Andropogoneae, Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta, Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD clade; Panicoideae; Andropogoneae; Zea.
                                                                                                                         1 (Dates 1 to 850)
Whitelaw,C.A., Quackenbush,J., Van Aken,S., Utterback,T.,
Resnick,A., Fraser,C.M., Budiman,M.A., Bedell,J.A., Rohlfing,T.,
Citek,R.W., Nunberg,A., Robbins,D. and Lakey,N.
Consortium for Maize Genomics
Unpublished (2002)
Other_GSSs: OGOAS10TH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 (bases 1 to 907)
Whitelaw, C.A., Quackenbush, J., Van Aken, S., Utterback, T.,
Resnick, A., Fraser, C.M., Budiman, M.A., Bedell, J.A., Rohlfing, T.,
Citek, R. W., Nunberg, A., Robbins, D. and Lakey, N.
Consortium for Maize Genomics
Unpublished (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        629 crircaccaacaraccicaacaraaracreccaccaccaccaccaccaccaccaccacacaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            540 GGAGAGAGCAGCGAAGGTGATGAGGTATAAGGGAGAAGAGAAGAAGAGGCGGCGCTATGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              509 gencceceaeccenaecrenarecerncaaecaeaeaeceaneaececenaeececraceaea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       600 GCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   689 craccaaccagccagcrcaccrccarcarcarrcarracaaacac 738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="taxon:4577"
/clone="zmwBMa0340B19"
/clone lib="Zm O.7_1.5_KB"
/clone lib="Zm O.7_1.5_KB"
methylation filtered genomic DNA library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ٠<u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 850;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 711 CTATGATCCTAGTAAACTTCACCTCGGATGGTTCCGGTAATTTATAGCAC
                                                                                                                                                                                                                                                                                          USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                          9712 Medical Center Drive, Rockville, MD 20850,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 94.8; DB 9;
Pred. No. 1.2e-14;
0; Mismatches 67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /mol_type="genomic DNA"
/strain="B73"
                                                                                                                                                                                                                                                                                                                                                                                                                           1. .850
/organism="Zea mays"
                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                   Seq primer: TF
Class: methylation filtered
                                                                                                                                                                                                                                                                                                                                                  Email: whitelaw@tigr.org
                                                                                                                                                                                                                                                   Contact: Cathy Whitelaw
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9.5%;
                                                                                                                   (bases 1 to 850)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 154; Conservative
                                                                                                                                                                                                                                                                                                              Tel: 301-838-5843
Fax: 301-838-0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CC685002.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Zеа шаув
                                                                                                                                                                                                                                                                       TIGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
SOURCE
ORGANISM
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CC685002/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                        TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
                                                                                                                 REFERENCE
                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                             · FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CC685007 850 bp DNA linear GSS 19-JUN-2003 OGOAS10TV ZM_0.7_1.5_KB Zea mays genomic clone ZMMBMa0340B19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                          Embryophyta; Tracheophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTTTGTCAAGGTACCCGAAG-----CCATGGCATCGCCATCATCTCCAGCTTCGCC 710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD clade; Panicoideae; Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                  1 (bases 1 to 761)
Whitelaw, C.A., Quackenbush, J., Van Aken, S., Utterback, T.,
Resnick, A., Fraser, C.M., Budiman, M.A., Bedell, J.A., Rohlfing, T.,
Citek, R.W., Nunberg, A., Robbins, D. and Lakey, N.
Consortium for Maize Genomics
Unpublished (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAGAGAGCAGCGAAGGTGATGAGGTATAGGCAGAAGAGAGGAGGCGGCGCGTATGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540 GGACCGGGAGGCGAAGGTGCGGTACAAGGAGAAGCGGAAGAGAGGGGGCGCTACGAGAA
                                                                                                                                 DNA linear GSS 23-J
genomic clone ZMMBMa0146I17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db.cxef="taxon:4577"
/clone="xxwBMa0146117"
/clone="below" 0.7 1.5 KB"
/note="Vector: pBCSK-; Site 1: HincII; 0.7-1.5 kb
methylation filtered genomic DNA library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ٠.
م
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 761;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTATGATCCTAGTAAACTTCACCTCGGATGGTTCCGGTAATTTATAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9712 Medical Center Drive, Rockville, MD 20850, USA
Tel: 301-838-5843
Fax: 301-838-0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9.5%; Score 94.8; DB 9;
67.0%; Pred. No. 1.1e-14;
tive 0; Mismatches 67;
                                                                                                                                                                                                                                                                                          Sukaryota, Viridiplantae, Streptophyta,
                                                                                                                                                    OGCCY57TM ZM 0.7 1.5 KB Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /mol_type="genomic DNA"
/strain="B73"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1. .761
/organism="Zea mays"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Seq primer: TR
Class: methylation filtered
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Email: whitelaw@tigr.org
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               genomic survey sequence.
CC685007
CC685007,1 GI:32089783
                                                                                                                                                                          renomic survey sequence
                                                                                                                                                                                                            GI:32147160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Cathy Whitelaw
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Other GSSB: OGCCY57TC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
Matches 154; Conserv
                                                                                                                                                                                                            CC728227.1
                                                                                                                                                                                                                                                       Zea mays
                                                                                                                                                                                                                                                                         Zea mays
  774
                                    36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IGR
774 T
                                    36 T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                               CC728227/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
COMMENT
                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 5.
CC685007
                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
```

629

628

689

599

Gaps

```
Similarity
                                                                                                                                                                                                                                                                                                                                                                          099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     227
                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 8
CV291360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                       쉽
                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                    쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CL983403 1006 bp DNA linear GSS 23-SEP-2004 ZMMBHa0001i21.f ZMMBHa Zea mays genomic clone ZMMBHa0001i21 5',
                                                                                                                                                                                                                                                                                                                                                                                                        599
                                                                                                                                                                                                                                                                                                                                                                                                                                      651 GGACCGGGAGGCGAAGGTGATGCCGTACAAGGAGAAGCGGAAGAGGAGGGGCGCTACGAGAA 592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       600 GCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCG 659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCATGGCATCGCCATCATCTCCAGCTTCGCC 710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         531 CTTCGCCAAGGTGCCCGACGGTGATGCTCCCGCGCCCACCGGCGCGCCGCCGCGCGGGGG 472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae, PACCAD clade; Panicoideae, Andropogoneae, Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The University of Georgia Department of Genetics, C426a Life Sciences Building, Athens,
                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                         /clone="zMMBMa0340B19"
/clone lib="zM 0.7 1.5 KB"
/note="Vector: pBGSK-; Site 1: HincII; 0.7-1.5 kb
methylation filtered genomic DNA library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTATGATCCTAGTAAACTTCACCTCGGATGGTTCCGGTAATTTATAGCAC 760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               471 chaccaaccacchcaacchcaarcancancancanacaacac 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 (bases 1 to 1006)
Ma,J., SanMiguel,P., Liu,R., Haller,K., Soderlund,C. and
                                                                                                                                                                                                                                                                                                                                                                          6
                                                                                                                                                                                                                                                                                                                                          Length 907;
Other_GSSs: OGOAS10TV
Contect: Cathy Whitelaw
TIGR
9712 Medical Center Drive, Rockville, MD 20850, USA
                                                                                                                                                                                                                                                                                                                                                                        67; Indels
                                                                                                                                                                                                                                                                                                                                       Score 94.8; DB 9;
Pred. No. 1.2e-14;
0; Mismatches 67;
                                                                                                                                                                                         /mol_type="genomic_DNA"
/strain="B73"
/db_xref="taxon:4577"
                                                                                                                                                                             organism="Zea mays"
                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Zea mays'
                                                             Tel: 301-838-5843
Fax: 301-838-5843
Email: whitelaw@tigr.org
Seq primer: TR
Class: methylation filtered.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ZMMBH sequences
Unpublished (2004)
Contact: Jeff Bennetzen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   660 CTTTGTCAAGGTACCCGAAG-
                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 67.0%;
Matches 154; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: maize@uga.edu
Plate: 0001 row: i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rel: 706-542-3698
ax: 706-583-0972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .1006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Class: BAC ends.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sennetzen Lab
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bennetzen, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CL983403.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IIS A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10602,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 7
CL983403
                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JERSION
                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

```
The sequence provided is trimmed of vector and low quality regions. Full sequence and original trace file are available from the Plant Genome Network website (http://pgn.cornell.edu)
Plate: aof01-5ms1 row: b column: 04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EST 09-JUN-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                  599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Asparagus officianis

Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnoliophyta; Liliopsida; Asparagales;

Asparagaceae; Asparagus.

1 (bases 1 to 848)

dePamphilis, C., Carlson, J., Ma, H., Soltis, D., Soltis, P.,

Oppenheimer, D., Frohlich, M., Doyle, J., Tanksley, S., Webb, M.,

Gebens-Mack, J., Landherr, L., Ilut, D. and Wall, K.

Generation of ESTs from early male inflorescences of Asparagus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTTTGTCAAGGTACCCGAAG-----CCATGGCATCGCCATCATCTCCCAGCTTCGCC 710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Penn State University
208 Mueller Laboratory, Department of Biology, ATTN Rm212, Penn
State University, University Park, PA 16802, USA
Tel: 814 863 6413
Fax: 814 865 9131
Email: cwd3@psu.edu or jhl10@psu.edu
/mol_type="genomic DNA"
/cultivar="B73"
/db_xref="taxon:457"
/done="zwMaha0001:21"
/tissue_type="immature ear"
/dev_stage="6-8 weeks"
/lab_host="lab"zwMsha"
/clone_lib="zwMsha"
/note="Vector: TOPOpcr4; Site_1: EcoRI; Site_2: EcoRI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                  540 GGAGAGAGCAGCGAAGGTGATGAGGTATAGGGAGAAGAGAGAAGAGGCGGCGCTATGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         47 GGACCGGGAGGCGAAGGTGCGGTACAAGGAGAAGCGGAAGAGGGGGGGTACGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     600 GCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      711 CTATGATCCTAGTAAACTTCACCTCGGATGGTTCCGGTAATTTATAGCAC 760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         craceaaccaecreecreachcearcaicairearrearrearaeaaacae 276
                                                                                                                                                                                                                                                                                                                                                                                           <u>.</u>
ن
                                                                                                                                                                                                                                                                                                                                    Length 1006;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CV291360 848 bp mRNA linear ES aof01-5ms1-b04 Aof01 Asparagus officinalis cDNA clone aof01-5ms1-b04 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished (2004)
Contact: Claude dePamphilis or James Leebens-Mack
Mueller Laboratory
                                                                                                                                                                                                                                                                                                                           9.5%; Score 94.8; DB 10;
67.0%; Pred. No. 1.2e-14;
iive 0; Mismatches 67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tissue type="male inflorescences"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1. .848
/organ1sm="Asparagus officinalis"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Asparagus officinalis (garden asparagus)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /mol_type="mRNA"
/db_xref="PGN:aof01-5ms1-b04"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    db_xref="taxon:4686"
clone="aof01-5ms1-b04"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CV291360
CV291360.1 GI:52577578
                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity 67.03
Matches 154; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Seq primer: M13F
```

ઠે

8

ò 염 a

ò

8

g ò

```
OMAP Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CL925503.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Simi
Matches 124;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 10
CL925503
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                   ORIGIN
                                                                                                                                                                                                                       ద
                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                  음
                                                                                                                                                                                                                                                                                                                                                       ò
/clone lib="According to the property of the project (FGP). Site 1: EcoRI; Site 2: Nato; This is a directionally cloned, non-normalized library. This library has been generated by the Floral Genome Project (FGP). The Floral Genome Project (FGP). The Floral Genome Project (BBI-0115644). More information about the project can be obtained at http://fgp.bio.psu.edu"
                                                                                                                                                                                                                                                                  ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21-SEP-2004
                                                                                                                                                                                                                                                                                                                                                       428
                                                                                                                                                                                                                                                                                                                                                                                                                                            488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  548
                                                                                                                                                                                                                                                                                                                                                                                                  550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGAAGGTGATGAGGTATAGGGAGAAGAGGAAGAGGCGCCGCTATGACAAGCAAATCCGAT 610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACGAGTCCAGAAAAGCTTAACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGG 670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               611 TACCCGAAGCCATGGCATCGCCATCATCTCCAGCTTCGCCCTATGATCCTAGTAAACTTC 730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        609 CACCGGAGACGAGCCAAGCTCCGGCGGTTAACCCTCCGAATTATAATCAGGAGAGTTTG 668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Oryza sativa (indica cultivar-group)
Oryza sativa (indica cultivar-group)
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ma,L., Wangc,J., Chen,C., Liu,X., Su,N., Li,L., Wang,X., Cao,M., Jiao,Y., Sun,N., Zhang,X., Bao,J., Sun,D., Zhao,H., Yuan,L., Wong,G.K.S., Deng,X.W. and Wang,J.
An analysis of transcriptional regulation of the rice genome and its comparison to Arabidopsis
                                                                                                                                                                                                                                                                                                            ACATCGTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGA
                                                                                                                                                                                                                                                                                                                                                     369 ACGTCATGCCTTTCTCCGGCGTTGGCCCCGCTACGTTTAGCCTCGACCCCTCCGGCAACA
                                                                                                                                                                                                                                                                                                                                                                                                  CTATTGACACAGAGATGATGGTGGGGCCTGCCCATTATCCCACAATGCAGGAGAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                            429 ACTGCGCCACAGCCGAAGGCACGACGCCGAGCCAAAGCGGACCCAAACCCCGACAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAAAGTGTTGAGGTACAAAGAAGAAGAAGAAGAAGAAGAAATACGAGAAGCAAATCCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     acecricaacaaaaecerareceeacareaececeaecaraaaaeeecearriceeaaea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0sIFCC023161 Oryza sativa Express Library Oryza sativa (Indica cultivar-group) genomic, genomic survey sequence.
                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Oryza sativa (indica cultivar-group)"
/mol_type="genomic DNA"
                                                                                                                                                                                                                                                                  .
0
                                                                                                                                                                                                                         Length 848;
                                                                                                                                                                                                                     9.3%; Score 92.6; DB 7; Length 8.55.9%; Pred. No. 4.8e-14; tive 0; Mismatches 139; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Beijing 101300, China
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: chenchen@genomics.org.cn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ehrhartoideae; Oryzeae; Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Chen Chen
Department of Bioinformatic
Beijing Institute of Genomics
Chinese Academy of Sciences, 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GI:52399671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rice genomic sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTTTGGATGGTACC 683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rel: 86-10-80481559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 864)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             exon-trapped
                                                                                                                                                                                                                       Query Match
Best Local Similarity 55.9
Matches 176; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     731 ACCTCGGATGGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CL972569.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Class:
                                                                                                                                                                                                                                                                                                            431
                                                                                                                                                                                                                                                                                                                                                                                                  491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
SOURCE.
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 9
CL972569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCUS
                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                            g
```

```
linear GSS 14-SEP-2004
genomic clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /tissue_type="young leaves"
\lambda hose="DH10B T1 phage resistant"
\clone lib="OA ABB"
\note="Vector: _pAGIBAC1; Site_1: Hindill; Site_2: Hindill"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ô
                                                                                                                                                                                                                                                                          704
                                                                                                                                                                                                                                                                                                                              650
                                                                                                                                                                                                                                                                                                                                                                             764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  765 GAGAGGTCGCTTCGCCAAAGAAGCTGA---TCAGGAAGCTGTCGCACCGCCATCCACCTA 821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tracheophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                 651 CAACGGCCGCTTTGTCAAGGTACCCGAAGCCATGGCATCGCCATCATCTCCAGCTTCGCC
                                                                                                                                                                                                                             645 CGCAATGGTGGAGAGGGCCAAGCTGATGAGGTACAAGGAGAAGAGGAAGAAGAAGAAGAGGTG
                                                                                                                                                                                                                                                                                                                                                                             705 CTACGAGAAGCAAATCCGGTACGCGTCCAGAAAAGCCTATGCCGAGATGAGGCCCCGAGT
                                                                                                                                                                                                                                                                                                                              591 CTATGACAAGCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCCATGGGT
                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
/db_xref="taxon:39946"
/clone_lib="Oryza sativa Express Library"
/note="Oryza sativa exon trapped genomic seguences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 (bases 1 to 640)
Kim,H., Yu,Y., Stum,D., Yost,D., Rao,K., Luo,M., Jetty,R.,
Kudrna,D., Muller,C., Hatfield,J., Soderlund,C. and Wing,R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Oryza australiensis
Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Trach
Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae,
Ehrhartoideae, Oryzeae, Oryza.
                                                                                                                                                                            э,
,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                          Length 864;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 640;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           USA
                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unpublished (2004)
Contact: Rod A. Wing
Arizona Genomics Institute
University of Arizona
Forbes Bullding Room 303, Tucson, AZ 85721-0036,
Tel: 520 626 9595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CL925503 640 bp DNA OA_ABa Oryza australiensis OA_ABa0031L09.f OA_ABa0031L09 5', genomic survey sequence.
                                                                                                                     Score 91.2; DB 10;
Pred. No. 1.2e-13;
0; Mismatches 63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 9.1%; Score 90.4; DB 10; Similarity 68.9%; Pred. No. 1.8e-13; 24; Conservative 0; Mismatches 56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Oryza australiensis"
|mol_trype="genomic DNA"
|db_xref="taxon:4532"
|clone="OA_ABaO031L09"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ဗ္ဗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FORWARD: TAA TAC GAC TCA CTA TAG GG
BACKWARD: CAC TCA TTA GGC ACC CCA
Plate: 0031 row: L column: 09
Seg primer: TAA TAC GAC TCA CTA TAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     822 IGICGATCCTAGTAGGCTTGAGCTTGGA 849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: rwing@genome.arizona.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    711 CTATGATCCTAGTAAACTTCACCTCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GI:52045241
                                                                                                                             9.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Oryza australiensis
                                                                                                                          Query Match
Best Local Similarity 68.3
Matches 142; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Fax: 520 621 1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Class: BAC ends.
```

g

ઠે

à

g

ઠે

```
CL149066 1329 10593527 148 31784 267 Sorghum methylation-filtered library (LibID: 104) Sorghum bicolor genomic clone, 10593527, genomic survey
                                                                                                                                                                                                                                                                                                      Sorghum bicolor (sorghum)
Sorghum bicolor
Sorghum bicolor
Bukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD
clade; Panicoideae; Andropogoneae; Sorghum.
1 (Basea I to 736)
Bedell, J.A., Budiman, M.A., Nunberg, A., Citek, R.W., Robbins, D.,
Jones, J., Flick, B., Rohlfing, T., Fries, J., Bradford, K.,
MCMenamy, J., Smith, M., Holeman, H., Roe, B.A, Wiley, G., Korf, I.F.,
Rabinowicz, P.D., Lakey, N., McCombie, W.R., Jeddeloh, J.A. and
Martienssen, R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="Organ: leaf, Vector: pBCSK(-); Site_1: HincII; DNA prepared from purified nuclei was randomly sheared, end-repaired, size fractionated to enrich for the 0.5 to 5 b fraction, ligated into HincII-digested pBCSK(-) vector and electropozated into E. coli cells. This is a methylation-filtered library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone_lib="Sorghum methylation-filtered library (LibID: 104)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        540 GGAGAGGAGCGAAGGTGATGAGGTATAGGGAGAAGAGGAAGAGGCGCCGCTATGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      600 GCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            660 CITIGICAAGGIACCCGAAG-----CCATGGCATCGCCATCATCICCAGCTTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   268 errececaaderecedadearearearecerecedeedeedeecedeedeedeadadea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 328 gcagarrogeracecrococaagecoracecagacarecececececerora
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 736;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sorghum genome sequencing by methylation filtration PLOS Biol. 3 (1), e13 (2005)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8.9%; Score 89; DB 10; Length 73
66.5%; Pred. No. 4.6e-13;
ive 0; Mismatches 65; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               711 CTATGATCCTAGTAAACTTCACCTCGGATGGTTCCGGTAAT 751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 63108, USA
                       751
                                                            7
                                             44 CGAACCAGGCCGTCTCAAGGTCGGATGGTTCCGTTCAT
                       714 TGATCCTAGTAACTTCACCTCGGATGGTTCCGGTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Orion Genomics, LLC
4041 Forest Park Ave, St. Louis, MO 63
4041 Forest Park Ave, St. Louis, MO 63
Tel: 314 615 6979
Fax: 314 615 5975
Emall: jb6delld@oriongenomics.com
Plate: 329 row: l column: 03
Seq primer: SWfor Forward
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1. .736
/organism="Sorghum bicolor"
/mol_type="genomic DNA"
/cultivar="ATx623"
/db_xref="texon:4558"
/clone="10593527"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                736.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                High quality sequence stop: 7
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Class: methylation filtered
                                                                                                                                                                                                                                                                        GI:40649082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Bedell JA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity 66.5
Matches 147; Conservative
                                                                                                                                                                                                                                                    CL149066
CL149066.1
                                                                                                                                                                                                                                 sequence.
                                                                                                                                                                    CL149066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                              ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                           RESULT 12
CL149066/c
                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
JOURNAL
PUBMED
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                       8
                                                          ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                             CC879645 1nnear GSS 29-JUL-2003 ZMWBBD0214J20.r ZMWBBD Zea mays genomic clone ZMWBBD0214J20 3',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Yu,Y., Kim,H.R., Hatfield,J., Soderlund,C., Bharti,A.K., Messing,J. and Wing,R.
                         629
                                                                                                                           569
                                                                                                                                                                  CITIGICAAGGIACCCGAAGCCAIGGCATCGCCATCACTCTCCAGCTICGCCCTATGAICC 719
                                                                                                                                                                                        Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Bermatophyta, Magnoliophyta, Liliopaida, Poales, Poaceae, PACCAD clade, Panicoideae, Andropogoneae, Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          224 GGACCGGGAGGCGAAGGTGATGCGGTACAAGGAGAAGCGGAAGAAGAGAGGGCGCTACGAGAA 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 45
                                                                                                       GCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCG
104 CTTCGCCAAGGTGCCCGACGGTGAGGCTCCGTCGCCACCGGCCCGGCCGCCGCAGCATGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   600 GCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        660 CTTTGTCAAGGTACCCGAAGCCATGGCATCG-----CCATCATCTCCCAGCTTCGCCCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540 GGAGAGAGCAGCGAAGGTGATGAGGTATAGGGAGAAGAGAGAAGAGGCGGCGCTATGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone lib="ZMMBBb"
/note="Vector: pBeloBAC11; Site_1: HindIII; Site_2:
HindIII; Zea mays L. ssp. mays"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished (2003)
Contact: Rod Wing
Arizona Genomics Institute
University of Arizona
Biological Sciences West, 448A, P.O. Box 210088, Tucson, AZ
Tel: 520 626 3987
Fax: 520 621 9288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 726;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 90.4; DB 9; I
Pred. No. 1.9e-13;
0; Mismatches 66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /mol_type="genomic DNA"
/cultivar="B73"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: rwing@genome.arizona.edu
PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /db_xref="taxon:4577"
/clone="ZMMBBb0214J20"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequencing of the maize genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      organism="Zea mays"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                        genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                               GI:33312386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 67.0%;
Matches 146; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Plate: 0214 row: J
Seq primer: M13r
Class: BAC ends.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BACKWARD: M13r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                             CC879645.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FORWARD: T7
                                                                                                                                                                                                                                                                                                                                                                                                                                          Zea mays
                                                                                                                                                                                                                                                                                                                                                                           CC879645
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Zea mays
                                                                                                                                                         999
                                      450
                                                                                900
540
                                                                                                                                                                                                                                                               RESULT 11
CC879645/c
                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                               LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
```

ä

ORIGIN

g ò g ò g

ò

```
/ub_XIEST TaxAnonizil2392."
/tissue type="Leaf"
/clone_Tib="Muss acuminata leaves HOT stress"
/clone_Tib="Muss acuminata specific to vitro micro
propagated M: acuminata ssp. burmannicoides var. Calcutta
4 (AA) plants, 30 cm high, were used in this study. These
plants were obtained from the Banana Germplasm Bank at
Embrapa Cassava and Tropical Fruits, Cruz das Almas,
Bahia, Brazil (Muss Germplasm Information System - MGIS
accession number ITC0249). Prior to temperature stress
conditions, banana plants were maintained for 48 hours in
an environment chamber at 250C with 80% air humidity, and
a 16 hour light/8 hour dark cycle. Leaf samplasm the
rise to 350C, samples were collected after one (H1), two
(H2) and three (H3) hours. With the temperature raised to
450C, new samples were collected after one (H4), two
(H5), three (H6), nine (H7), and 21 hours (H8) following
the change in temperature. Tissues were immediately frozen
in liquid N and stored at -800C until total RNA
extraction. Total RNA was isolated using the plant RNA
extraction. Total RNA was isolated using the Plant RNA
extraction. Total RNA was isolated using the Plant RNA
extraction mamples were combined in equivalent
quantities. The resulting bulked sample (I mg of total
RNA) was then submitted to poly (A) + RNA purification
using the Pastrack 2.0 mRNA isolation Kit (Invitrogen).
Pull length cDNA enriched, non-normalized, cDNA library kit
and cloned into the pDNR-LIB vector (Clontech).
                               Bukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Zingiberales; Musaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       104 cargegeckégeckégeregeregekenterenteretreregeckentrekegek
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              465 CACTATTAGCAATGAAGCAATCATGACTATTGACACAGAGATGATGGTGGGGGCCTGCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            318 Ageceaccceaecardeadadadadccaacarcardadgracaadaadadadaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCTAGTGCAGCCACCGGCAAGAGCCCACATCGTGCCATTTCACGGAGGTGCATTCACCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     464 CGCTTCAAG-----TGGGAGCAACAAGGAGGCTCGAGAAGCTATGGCTGCTGCAGGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 organism="Musa acuminata subsp. burmannicoides"
                                                                                                              l (bases 1 to 689)
Santos, C.M.R., Martins,N.F., Horberg,H.M., de Almeida,E.R Coelbo,M.C.F., Togawa,R.C., da Silva,F.R., Caetano,A.R., Miller,R.N.G. and Souza,M.T. Jr.
Miller,R.N.G. expressed sequence tags from Musa acuminata s burmannicoides, var. Calcutta 4 (AA) leaves submitted to temperature stresses.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 689;
                                                                                                                                                                                                                                                                                                                                                                                                               Embrapa Recursos Geneticos e Biotecnologia

CXP 02.372, CEP 70.770-900, Brasilia - DF, Brazil

Tel: +55(61)448.4741

Fax: +55(61)340.3658

Email: felipes@cenargen.embrapa.br
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 7.8%; Score 77.2; DB 8; Length 6 Best Local Similarity 56.9%; Pred. No. 8.3e-10; Matches 164; Conservative 0; Mismatches 118; Indels
                                                                                                                                                                                                                                                                                                          Theor. Appl. Genet. 110 (8), 1517-1522 (2005)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /mol_type="mRNA"
/cullivar="Variety Calcutta 4
/sub_species="burmannicoides"
/db_xref="taxon:213592"
                                                                                                                                                                                                                                                                                                                                                                    Contact: Felipe Rodrigues da Silva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                 15841358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   405
        ORGANISM
                                                                                                                                                                                                                                                                                                       JOURNAL
PUBMED
COMMENT
                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PEATURES
                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                         741 bp DNA linear GSS 05-FEB-2003
Genomic survey sequence.
BZ679381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DN238319 A07_.b_049. Musa acuminata leaves HOT stress Musa acuminata leaves HOT stress Musa acuminata subsp. burmannicoides cDNA 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                          Spermatophyta; Magnoliophyta; Embryophyta; Tracheophyta; clade; Panicojdeae; Panicojdeae; Pandropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        615 GTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTACC 674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 CTCCCGCAAGGCCTATGCAGAGATGCGGCCGCGTCAAGGGCCGCTTCGCCAAGGTGCC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    675 CGAAGCCATGGCATCG-----CCATCATCTCCCAGCTTCGCCCTATGATCCTAGTAAACT 728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121 CGACGGTGAGGCTCCGTCGCCACCGGCGCGGCCGCAGCATGCTACGAACCAGGCCGGCT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:4577"
/clone="ZMMBTa016P07"
/clone_lib="ZM_0.6_1.0 KB"
/note="Vector: pCR4_TOPPO; Site_1: EcoRI; 0.6-1.0 kb high
CoT selected genomic DNA library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GGTGATGCGGTACAAGGAGAAAGCGGAAGAGGCGCTACGAGAAGCAGATTCGGTACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGTGATGAGGTATAGGGAGAAGAGGAAGGCGGCGCTATGACAAGCAAATCCGATACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 (bases 1 to 741)
Whitelaw,C.A., Quackenbush,J., Van Aken,S., Utterback,T.,
Resnick,A., Fraser,C.M., Yuan,Y., San Miguel,P., Ma,J. and
Bennetzen,J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 741;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  729 TCACCTCGGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAAT 774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      csaccrossarssrrcstrascaaasasscacrostraaar 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9712 Medical Center Drive, Rockville, MD 20850, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8.9%; Score 88.8; DB 9; Length 7 65.5%; Pred. No. 5.2e-13; ive 0; Mismatches 72; Indels
Musa acuminata subsp. burmannicoides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /mol_type="genomic_DNA"
/strain="B73"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1. .741
/organism="Zea mays"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Maize Genomics Consortium
Unpublished (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: whitelaw@tigr.org
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Cathy Whitelaw
                                                                                                                                                                                                                                                                             BZ679381.1 GI:28233507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DN238319.1 GI:70795613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Seg primer: TF
Class: sheared ends
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 65.5<sup>3</sup>
Matches 148; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tel: 301-838-5843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Fax: 301-838-0208
                                                                                                                                                                                                                                                                                                                                       Zea mays
                                                                                                                                                                                                                                                                                                                                                                    Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DN238319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TIGR
                            208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                               LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 14
DN238319
                                                                                                              RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
SOURCE
                                                                                                                                     BZ679381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
```

셤

. გ ò

ò 셤 ò Db 577

524 517

Gaps

```
/organism="Triticum aestivum"
/mol_type="mRNA"
/do_tref="taxon:456"
/do.xef="taxon:456"
/do.xef="taxon:456
                                                                                                                                                                                                                                                                                                                                                                                                             FGASO16368 Triticum aestivum FGAS: Library 4 Gate 8 Triticum aestivum CK163737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Email: fgas_ests@cs.usask.ca
This sequence is the direct result of the Base calling software
Phred (default parameters). It is the raw base calls. To aid in the
identification of the high quality insert the software Lucy
(default parameters) has been run on this sequence. Lucy identified
the region [287,688].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae,
Pooideae, Triticeae, Triticum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Allard, F., Crosby, W.L., Danyluk, J., Eudes, F., Frick, M., Gaudet, D., Genswein, B., Graf, R., Gulick, P., Hrycan, L.D., Laroche, A., Links, M.G., McCarthy, E.L., Monroy, A., Muzak, I., Nilson, D., Penniket, C., Roach, J.L. and Sarhan, F.
                                                  585 GCGGCGCTATGACAAGCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          University of Saskatchewan, Department of Computer Science 1C101 Engineering Building, 57 Campus Drive, Saskatcoon, Saskatchewan, S7N 5A9, Canada 25, 130 966 1769 Fax: 306 966 1763
                                                                                                                                                                                                                                                     645 ATGGGTCAACGCCCCTTTGTCAAGGTACCCGAAGCCATGGCATCGCC 692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B009 row: A column: 12.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          riticum aestivum (bread wheat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CK163737.1 GI:38994276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished (2003)
Contact: Wm L Crosby
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        riticum aestivum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ioinformatics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Plate: L4B009
                                                                                                                                                                                                                                                                                                                                                                                 RESULT 15
CK163737/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                              셤
                                                                                                                                                                 ò
                                                                                                                                                                                                                                                     B
```

524 ACCGGGGAGGCAGGCTGGCGAGGCTGATGCGGTACCGGGAGAAGAGGAAGAACCGCCGG 465

532 ACAATGCAGGAGAGAGCAGCGAAGGTGATGAGGTATAGGGAGAAGAGGAAGAGGCGGCGC

Gaps

0;

Length 1061;

Score 77.2; DB 7; Length 106 Pred. No. 9.3e-10; 0; Mismatches 43; Indels.

Query Match
Best Local Similarity 70.5%;
Matches 103; Conservative

```
592 TATGACAAGCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTC 651
                   404 AAGGCCCCTTCGCCAAGCGCACCGA 379
                                                                GICAAGGIACCCGA 677
                                                                652 AACGGCCGC
                            B
                                                             ò
```

Search completed: February 23, 2006, 14:49:49 Job time : 4767 secs

```
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 265, App
265, App
22406, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        403, App
30197, A
                                                                                                                                                                                                                                                                                        ; Search time 993 Seconds
(without alignments)
8294.361 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 75;
Sequence 79,
Sequence 74,
Sequence 78,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 taactgcctcttcttcttcc......tagctactttgatgtgtaat 996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence Seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence Sequence S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /cgn2_6/ptodata/1/pubpna/US07_PUBCOMB.seq:*
/cgn2_6/ptodata/1/pubpna/US08_PUBCOMB.seq:*
/cgn2_6/ptodata/1/pubpna/US08_PUBCOMB.seq:*
/cgn2_6/ptodata/1/pubpna/US08B_PUBCOMB.seq:*
/cgn2_6/ptodata/1/pubpna/US108_PUBCOMB.seq:*
/cgn2_6/ptodata/1/pubpna/US106_PUBCOMB.seq:*
/cgn2_6/ptodata/1/pubpna/US106_PUBCOMB.seq:*
/cgn2_6/ptodata/1/pubpna/US106_PUBCOMB.seq:*
/cgn2_6/ptodata/1/pubpna/US108_PUBCOMB.seq:*
/cgn2_6/ptodata/1/pubpna/US108_PUBCOMB.seq:*
/cgn2_6/ptodata/1/pubpna/US108_PUBCOMB.seq:*
GenCore version 5.1.7 (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-723-947-74
US-10-723-947-74
US-10-723-947-85
US-10-723-947-86
US-10-723-947-84
US-10-723-947-84
US-10-723-947-80
US-10-723-947-80
US-10-723-947-80
US-10-723-947-80
US-10-723-947-80
US-10-723-947-80
US-10-723-947-80
US-10-437-963-83163
US-10-437-963-82314
US-09-938-842A-265
US-09-938-842A-265
US-09-938-842A-265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-437-963-40
US-10-260-238-403
US-10-437-963-30197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -412-699B-597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Published Applications NA Main:*
'cgn2_6/prodata/1/pubpna/US07_'cgn2_6/prodata/1/pubpna/US08_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_'cgn2_6/prodata/1/pubpna/US09B_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUMMARIES
                                                                                                                                                                                                                                                                                                   2006, 12:04:50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                           nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9793542 segs, 4134689005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Minimum DB seq length: 0 Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-723-947-75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query
Match Length
                                              Copyright
                                                                                                                                                                                                                                                                                                   February 23,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Total number of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      449
445
320.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           561
553
455.2
451.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  320.8
251.4
247.6
92.8
                                                                                                                                                                                                     OM nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Database
                                                                                                                                                                                                                                                                                                   Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Title:
```

υ	24	74.6	7.5	1320	7	US-10-437-963-25736	Seguence	25736, A
	25	73.8	7.4	589	8	7		111664,
•	26	73.6	7.4	1461	7	US-10-425-114-15481		15481, A
•	27	73.6	7.4	1521	æ			111667,
υ	28	73	7.3	1139	7			101201,
	29	72.2	7.2	388	σ			1513, Ap
υ	30	71.8	7.2	1297	m			17, Appl
•	31	71.8	7.2	1370	7	2		14597, A.
•	32	71.8	7.2	1404	7	US-10-425-114-13058	Sequence 1	13058, A
•	33	71.6	7.2	1260	æ	US-10-425-115-111666	Sequence 1	111666,
	34	70	7.0	972	7	US-10-767-701-11858		11858, A
•	35	70	7.0	1132	7	US-10-425-114-25452	Sequence	25452, A
•	36	70	7.0	1229	7	US-10-425-114-22309		22309, A
•	37	69.4	7.0	296	7	US-10-021-323-14874		14874, A
υ	38	68.4	9	533	7	US-10-021-323-16368		16368, A
•	39	68	8.9	1396	۲	US-10-767-701-12421		12421, A
•	40	68	6.8	1436	æ	US-10-425-115-50515		50515, A
•	41	67.6	6.8	901	8	US-10-425-115-34955		34955, A
υ	42	67.4	6.8	872	7	US-10-767-701-13864		13864, A
•	43	66.2	9.9	2066	7	US-10-437-963-15010		15010, A
•	44	65.8	9.9	742	æ	2		157736,
•		65.8	9.9	801	7	-10		1411, Ap
							•	
						ALIGNMENTS		
RESILT 1	17.							
US-1	0-723	US-10-723-947-75						
; Sec	quenc	Sequence 75, Application US/10723947	pplicat	tion US	/10	723947		
Pul	blica	tion No	. 08200	1402058	4 8 A	F-I		
Ξ;	NEKAL	_	ALTON:					
. ·	APPLICANT:	_	DCOVBK	Dubcovsky, Jorge	a)			•
	7777		an, bit	ran, bluling	1			
₹ 6	APPLICANI:	ANT: L	OUKOLAI	JOV, AL	1 CE	: Loukolanov, Artem		

RESULT 1

US-10-723-947-75

Sequence 75, Application US/10723947

Publication No. US20040205848A1

GENERAL INFORMATION:
APPLICANT: Dubcoveky, Jorge
APPLICANT: Loukolanov, Artem
TITLE OF INVENTION: REGULATION IN TEMPERATE GRASSES AND USES THEREOF
TITLE OF INVENTION: REGULATION IN TEMPERATE GRASSES AND USES THEREOF
TITLE OF INVENTION: REGULATION IN TEMPERATE GRASSES AND USES THEREOF
CURRENT APPLICATION NUMBER: US/10/723,947

CURRENT FILING DATE: 2003-11-26

PRIOR APPLICATION NUMBER: US 10/412,137

PRIOR FILING DATE: 2003-44-11

NUMBER OF SEQ ID NOS: 159

SOOTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 75

LENGTH: 996

TYPE: DNA
US-10-723-947-75

ö

120 240 121 TGCGGTTTGTGCGCGCCAACAACTGCCCGCGCCTCATGGTCTCGCCCATTCACCATCAT 180 240 TGCGGTTTGTGCGGCGCCAACAACTGCCCGCGCCCTCATGGTCTCGCCCATTCACCATCAT CACCACCACCACCATGGCTCGGCAGCAGACTACCCAGTGCCACCGCCGCCAGACATC CATCACCATCACCAGGAGCACCAGCTGTGTGAGTACCAGTTCTTCGCCCATGGCAACCAC 181 241 61 121 181 δ g g 염 ò ठे

us-10-723-947-75.rnpbm

Query Match Best Local Similarity 95.6%; Pred. No. 1.4e-254; Matches 952; Conservative 0; Mismatches 23; Indels 21; Gaps 1;	Oy 1 TAACTGCCTCTTCTTCTTCGACGTCTCTCCTCGGCTCCTCCAGGCCA 60		121 TGCGGTTTGTGCGGCGCAACAACTGCCGCGCCTCATGGTCTCGCCCATTCACCATGT 	181 CATCACCATCATGAGGAGCACCAGCTGTGAGTACCAGTTCTTGGCCCATGGCAACCAG [241 CACCACCACCACCATGGCTCGGCAGCAGACTACCCACTGCCACCGCCGCCACACATTC 30 241 CACCACCACCACCAGTGCCATGCCGCCGCCAGCAACTTC 27	301 GACCACCGGAGAACAIGGACCAGATCAITTCAIGAAACAGCGGCAGCGGAGCAGCGGC 33 280 GACCAIAGGAACAIGGACCACTTCAIGAAACAGCAGCGAGGAACAGCAGC 33	Oy 361 AGGCTCACGCTGGAGGTGGGCGCGACCAACACATGGCTCACCTAGTGCAGCCACCG 420	421 GCAAGAGCCCACATGTGCCGATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAA 48 		Oy 541 GAGAGAGCAGCAAGGTGATGAGGTATAGGAGAAGAGGAGGCGGCGCTATGACAAG 600	601 CAPATCCGATACGAGTCCAGAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGC	Oy 661 TTTGTCAAGGTACCCAAGCATGGCATCATCTCCAACTTCGCCTTTGTCTTTTTTTT	OY 721 AGTABACTICACCICGGAIGGITCCGGIAATITAIAGCACAAGCCAGAIAAAAIGGAIAAC 780	OY 781 ATATTCCTTCTGATTGATCCACCCGTGAAGCAGTTGTTCCTCAAAGTAAATAAGTCGG 840	OY 841 TTAGTGATTGATTGAGAGCCATTATGTTGACTTGACTATTTAAAATGGTCAGCAGAT 900	OY 901 CAATCAAACAAATGTATTTATTGAAACAAGTCTTGTTATACTACGTGTTGATTTAAACA 960	Oy 961 TGTAATTTCAAGGATAGCTACTTTGATGTGTAAT 996
Qy 301 GACCACGCAGAACATGGACCAGTTTCATGAAACAGCAGGGAACAGCAGC 360	361 AGCTCACGCTGGAGGTGGGGGGGGGGCCAACACAGGCTGCTGAGTGCGCGGGGGGGG		481 GCAATCATGACTATTGACACAGAGATGATGGTGGGGCCTGCCCATTATCCCACAATGCAG 	Qy 541 GAGAGCAGCGAAGGTGATGAGGTATAGGGAGAAGAAGAAGAGGCGGCTATGACAAG 600 	Qy 601 CARATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGC 660 Db 601 CARATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGC 660	Oy 661 TTTGTCAAGGTACCGAAGCCATGGCATCGCCATCTCTCCAGCTTCGCCCTATGATCCT 720	Oy 721 AGTAAACTTCACCTCGGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAAC 780 Db 721 AGTAAACTTCACCTCGGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAAC 780	781 ATAITTCCTTCTGATTGATCACCCGTGAAGCAGTTGTTCCTCAAAGTAAATAAGTCGG 	Oy 841 TTAGTGATTGATCGATTGGAGCCATTATGTTGACTATTTAAAATGGTCAGCAGAT 900 Db 841 TTAGTGATTGATCGATTGGAGCCATTATGACTTGACTATTTAAAATGGTCAGCAGAT 900	Oy 901 CAATCAAACAAATGTATTTATTGAAACAAGTCTTGTTATACTACGTGTTGATTTAAACA 960 Db 901 CAATCAACAAAATGTATTTATTGAAAGCAAGTCTTGTTATACACGTGTTGATTAAACA 960	961 TGTAATTTCAAGAGGATAGCTACTTTGATGTGTAAT 996 	RESULT 2	US-10-723-947-79 US-10-723-947-79 ; Publication No. US20040205848A1 ; GENERAL INFORMATION:	; APPLICANT: Dubcoveky, Jorge ; APPLICANT: Yan, Liuling ; APPLICANT: Loukoianov, Artem ; TITLE OF INVENTION: GENES RESPONSIBLE FOR VERNALIZATION	; TITLE OF INVENTION: REGOLATION IN TEMPERATE GRASSES AND USES THEREOF; ; FILE REFERENCE: 514112000320; ; CURRENT APPLICATION NUMBER: US/10/723,947 ; CURRENT FILING DATE: 2003-11-26	; PRIOR APPLICATION NUMBER: US 10/412,137; ; PRIOR FILING DATE: 2003-04-11; NUMBER OF SEQ ID NOS: 159; SOFTWARE: FastSEQ for Windows Version 4.0	; SEQ ID NO 79 ; LENGTH: 975 ; TYPE: DNA ; ORGANISM: Triticum dicoccoides US-10-723-947-79

```
964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         928
                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                        유
                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                          4641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5121
                                                                                                                                                                                                                                                                                                                                                                                          4701
                                                                                                                                                                                                                                                                                                                                                                                                                                            4761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        975
                                                                                                                                                                                                                                                                                                                                                                   555
                                                                                                                                                                                                                                                                                                                                                                                                                   615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      855
                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAGCCATGGCATCGCCATCATCTCTCGCCTATGATCTAGTAAACTTCACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4882 GGAIGGTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAAAATGATATTTCCTTCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1642 GACACAGAGATGATGGTGGGGCCTGCCCATTATCCCACAATGCAGGAGAGAGCAGCGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATTTATTGAAACAAGTCTTGTTATACTACGTGTTGATTTAAACATGTAATTTCAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5062 TATTTATTGAAACAAGTCTTGTTATACTACGTGTTGATTTAAACAIGTAATTTCAAGAGG
                                                                                                                                                                                                                                                                                                                                                                   GTGATGAGGTATAGGGAGAGGAGGAGGAGGCGGCGCTATGACAAGCAAATCCGATACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAAGCCATGGCATCGCCATCATCTCCAGCTTCGCCCTATGATCCTAGTAAACTTCACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAACATATTTCCTTCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTATT
                                                 APPLICANT: Yan, Liuling
APPLICANT: Loukolanov, Artem
APPLICANT: Loukolanov, Artem
TITLE OF INVENTION: REGULATION IN TEMPERATE GRASSES AND USES THEREOF
FILE REPERENCE: 514112000320
CURRENT APPLICATION NUMBER: US/10/723,947
CURRENT FILING DATE: 2003-11-26
                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                 Score 561; DB 8; Length 7051; Pred. No. 1e-152;
                                                                                                                                                                                                                                                        56.3%; Scor.
100.0%; Pred. No. ..
0, Mismatches
                                                                                                                                                             NUMBER OF SEQ ID NOS: 159
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 74
LENGTH: 7051
                                                                                                                                      PRIOR APPLICATION NUMBER: US 10/412,137 PRIOR FILING DATE: 2003-04-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        966
Sequence 74, Application US/10723947
Publication No. US20040205848A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATAGCTACTTTGATGTGTAAT
                                                                                                                                                                                                                TYPE: DNA
ORGANISM: Triticum monococcum
US-10-723-947-74
                                    APPLICANT: Dubcovsky, Jorge
                                                                                                                                                                                                                                                               Query Match 56.3
Best Local Similarity 100.
Matches 561, Conservative
                                                                                                                                                                                                                                                                                                                                                                   496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         916
                                                                                                                                                                                                                                                                                                                   436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5002
                                                                                                                                                                                                                                                                                                                                                                                                                   556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <del>a</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                    ठ
                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               요
                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
```

Sequence 78, Application US/10723947 Publication No. US20040205848A1 GENERAL INFORMATION:

US-10-723-947-78

```
2612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2373 GAAGCCATGGCGTCGCCATCATCTCCAGCTTCGCCCTATGATCCTAGTAAACTTCACCTC 2432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  916 TATTTATTGAAACAAGTCTTGTTATACTACGTGTTGATTTTAAACATGTAATTTCAAGAGG 975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2253 GTGATGAGGTATAGGGAGAAGAAGGAGGCGGCGCTATGACAAAGCAAATCAGATACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2433 GGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAACATATTTCCTTCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2553 TIGGAGCCATTATGTIGACTTGACTATTTAAAATGGTCAGCAGATCAATCAAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2613 TATTTATTGAAACAAGTCTTGTTATACTACGTGTTGATTTAAACATGTAATTTCAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       436 GTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2133 GIGCCATTITACGGAGGIGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                496 GACACAGAGATGATGGTGGGGCCTGCCCATTATCCCACAATGCAGGAGAGAGGGGGGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGATGAGGTATAGGGAGAAGAGGAGGCGCCGCTATGACAAGCAAATCCGATACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2313 TCCAGAAAAGCTTACGCTGAGCTTCGGCCACGGGTCAACGGCTGCTTTGTCAAGGTACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           676 GAAGCCATGGCATCATCTCCAGCTTCGCCCTATGATCCTAGTAAACTTCACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TIGGAGCCATTATGITGACTTGACTATTTAAAATGGTCAGCAGATCAATCAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               616 TCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 91, Application US/10723947
Publication No. US20040205848A1
GENERAL INFORMATION:
APPLICANT: Dubcoveky, Jorge
APPLICANT: Yan, Liuling
TITLE OF INVENTION: GENES RESPONSIBLE FOR VERNALIZATION
TITLE OF INVENTION: REGULATION IN TEMPERATE GRASSES AND USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                  USES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ouery Match 55.5%; Score 553; DB 8; Length 29
Best Local Similarity 99.1%; Pred. No. 1.4e-150;
Matches 556; Conservative 0; Mismatches 5; Indels
APPLICANT: Dubcovsky, Jorge
APPLICANT: Yan, Liuling
APPLICANT: Yan, Liuling
APPLICANT: Loukoianov, Artem
TITLE OF INVENTION: GENES RESPONSIBLE FOR VERNALIZATION
TITLE OF INVENTION: REGULATION IN TEMPERATE GRASSES AND
FILE REFERENCE: 514112000320
CURRENT APPLICATION NUMBER: US/10/723,947
CURRENT PILING DATE: 2003-11-26
PRIOR PILING DATE: 2003-11-26
PRIOR FILING DATE: 2003-04-11
                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQ ID NOS: 159
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 78
LENGTH: 2913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Aracciaciricarcicaan 2693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  976 ATAGCTACTTTGATGTGTAAT 996
                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA
, ORGANISM: Triticum dicoccoides
US-10-723-947-78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 5
US-10-723-947-91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         929
```

2372

735

855

795

675

2192

495

2252

9

111 288 171

```
Query Match
Best Local Simi]
Matches 541, (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-723-947-88
                                                                                                            TYPE: DNA
                                                                                                                                                                                                                                                                                                                            529
                                                                                                                                                                                                                                                                                                                                                                                                                                                              232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             643
                                                                                                                                                                                                                                                                                                                                                     요
                                                                                                                                                                                                                                                                                                                                                                                                          임
                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                        ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                    228
                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                          288
                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                               348
                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                  408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   900
                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                1 ATGTCCATGGCATGGGGTTTGTGGGCGCCCAAATTGCCCGTATCACATGATGTCGCCC
                                                                                                                                                                                                                                                                                                    61 GTTCTTCTTCATCATCACCATCATCAGGAACATCGGCAGCGCGGGTACCAGTTCTTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CATGGCAACCACCACCACCACCATGGCTCGGCAGACTACCCAGTGCCACCGCCG
                                                                                                                                                                                                                                                                                                                                                                   GGGAACAGCAGCCTCACGCTGGAGGTGGCCGCAGGCCCAACACACATGGCTCACCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGCAGCCACCGG-----CAAGAGCCCACATCGTGCCATTTCACGGAGGTGCATTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301 CTGCAGCCACCGGCCGCCCAAGAGCCACCATCGTGCCATTCCGCCGGAGTGCATTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACACTATTAGCAACGCAACGATCATGACTATTGATACAGAGATGATGGCGGGGACTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATTATCCCACAATGCAGGAGAGAGCAGCGAAGGTGATGAGGTATAGGGAGAAGGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421 Tatagreceaccarcaseasasasasaseasaserearcaseraseseasasases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGCGGCGCTATGACAAGCAAATCCGCTACGAGTCCAGAAAAGCTTACGCCGAGCTTAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGTCCATGTCATGCGGGTTTGTGCGGCGCCAACAACTGCCCGCGCGCCTCATGGTCTCGCCC
                                                                                                                                                                                                                                                                                      AACACTATTAGCAATGAAGCAATCATGACTATTGACACAGAGATGATGGTGGGGGCCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGCGGCGCTATGACAAGCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCATGGGTCAACGGCCGCTTTGTCAAGGTACCCGAAGCCATGGCATCGCCATCATCTCCA
                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 85, Application US/10723947
Publication No. US20040205848A1
GENERAL INFORMATION:
APPLICANT: Dubcovsky, Jorge
APPLICANT: Yan, Liuling
APPLICANT: Yan, Liuling
APPLICANT: For UNIVERSITY ARE
TITLE OF INVENTION: GENES RESPONSIBLE FOR VERNALIZATION
TITLE OF INVENTION: REGULATION IN TEMPERATE GRASSES AND USES THEREOF
FILE REFERENCE: 514112000320
                                                                                                                                                                                                      9
                                                                                                                                                                              Length
                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTTCGCCCTATGATCCTAGTAAACTTCACCTCGGATGGTTC 744
                                                                                                                                                                           Score 455.2; DB 8;
Pred. No. 2.9e-122;
0; Mismatches 103;
FILE REFERENCE: 514112000320
CURRENT APPLICATION NUMBER: US/10/723,947
CURRENT FILING DATE: 2003-11-26
PRIOR PPLICATION NUMBER: US 10/412,137
PRIOR FILING DATE: 2003-04-11
NUMBER OF SEQ ID NOS: 159
SOFTWARE: FASELSEQ FOR WINDOWS VERSION 4.0
                                                                                                                                                                           tch 45.7%;
al Similarity 83.0%;
533; Conservative
                                                                                                                       TYPE: DNA
ORGANISM: Hordeum vulgare
                                                                                                                                                                           Query Match
Best Local Similarity
Matches 533; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 6
US-10-723-947-85
                                                                                           SEQ ID NO 91
LENGTH: 642
                                                                                                                                                US-10-723-947-91
                                                                                                                                                                                                                                109
                                                                                                                                                                                                                                                                                      169
                                                                                                                                                                                                                                                                                                                                          229
                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                               289
                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                  349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       601
                                                                                                                                                                                                                                                        임
                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . අ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                      d
```

```
GGGAACAGCAGCAGGCTCACGCTGGAGGTAGACGCAGGCGGCCAAAACATGGCTCACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 GTTCT-----TCAGCATCAGGAACAACACGGCTGCGCGAGTACCAGTTCTTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               112 chaddechechechechechechechechededededarmeenechecheechee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          349 GGGAACAGCAGCAGGTCACGCTGGAGGTGGGCGCAGGCGGCCAACACACATGGCTCACCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       532 ccaccecicaaresccecrirercaaceraccaeaaccecrecarearescecea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          169 ATTCACCATCATCACCATCATCAGGAGCACCAGCTGTGTGAGTACCAGTTCTTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATGGCAACCACCACCACCACCATGGCTCGGCAGCAGACTACCCAGTGCCACCGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  # BIGCAGCCACCGG-----CAAGAGCCCACATCGTGCCATTTCACGGAGGTGCATTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      292 crechecchecescaesecchhahaecchechrerecenrecesesecrecarrence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACACTATTAGCAATGAAGCAATCATGACTATTGACACAGAGATGATGGTGGGGCCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            352 AGCACTATTAGCAATGCAACGATCATGACTATTGATACAGAGGATGATGGTGGGGGGCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATTATCCCACAATGCAGGAGAGAGCGAAGGTGATGAGGTATAGGGAGAAGAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u> AGGCGCCCTATGACAAGCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGG</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    472 AGGCGGTGCTATGACAAGCAAATCCGCTATGAGTCCAGAAAAGCTTACGCCGAGACTCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCATGGGTCAACGGCCGCTTTGTCAAGGTACCCGAAGCCATGGCATCGCCATCATCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               109 ATGTCCATGTCATGCGGTTTGTGCGCGCCCAACAACTGCCCGCGCCTCATGGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                    15;
                                                                                                                                                                                                                                                                                                                                                                          Length 639;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 88, Application US/10723947

Sequence 88, Application US/10723947

Publication No. US20040205848A1

GENERAL INFORMATION:

APPLICANT: Dubcoveky, Jorge
APPLICANT: Yan, Liuling
APPLICANT: Loukoianov, Artem
TITLE OF INVENTION: REGULATION IN TEMPERATE GRASSES AND USES 'FILE REFERRNCE: 514112000320

CURRENT APPLICATION NUMBER: US/10/723,947
                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                          Score 451.4; DB 8;
Pred. No. 3.7e-121;
0; Mismatches 91;
                                                                                                                                 NUMBER OF SEQ ID NOS: 159
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 85
LENGTH: 639
CURRENT APPLICATION NUMBER: US/10/723,947
CURRENT FILING DATE: 2007-1-26
                                              CURRENT FILING DATE: 2003-11-26
PRIOR APPLICATION NUMBER: US 10/412,137
PRIOR FILING DATE: 2003-04-11
                                                                                                                                                                                                                                                                                   ORGANISM: Triticum dicoccoides
                                                                                                                                                                                                                                                                                                                                                                      45.3%;
ilarity 83.6%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
```

408

291

231

462

522

411

471

351

```
PRIOR APPLICATION NUMBER: US 10/412,137
PRIOR FILING DATE: 2003-04-11
NUMBER OF SEQ ID NOS: 159
SOFTWARE: FastSEQ for Windows Version 4.
SEQ ID NO 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 84, Application US/10723947
Publication No. US20040205848A1 ·
GENERAL INFORMATION:
                                                                                                GRGANISM: Triticum monococcum US-10-723-947-82
                                                                                                                                         44.7%;
ilarity 83.0%;
Conservative
                                                                                                                                            Query Match
Best Local Similarity
Matches 537; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 9
US-10-723-947-84
                                                                         639
                                                                                                                                                                                                   109
                                                                                                                                                                                                                                                                                                                                                                        289
                                                                                                                                                                                                                                                                                                                                                                                                                                                           232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            583
                                                                                     TYPE: DNA
                                                                                                                                                                                                                                                                                                                229
                                                                                                                                                                                                                                                                                                                                                                                                                               349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          703
                                                                         LENGTH:
                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                           ઠ
                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                     345
                                                                                                                                                                                                                                                                       228
                                                                                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                                                                               CATGGCAACCACCACCACCACCACCATGGCTCGGCAGCAGACTACCCAGTGCCACGCG--- 285
                                                                                                                                                                                                                                                                                                                                                         174
                                                                                                                                                                                                                                                                                                                                                                                                                 234
                                                                                                                                                                                                                                                                                                                                                                                                                                             405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            594
                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                       GTTCTTCTTCATCATCACCATCATCAGGAACACCCCACTGCACGAGTACCAGTTCTTCGCC
                                                                                                                                                                                                                                                                                                                                             CTGCTGCAGCCACCGGCGGCGCCAAGAGGCCACCATCGTGCCATTCTGCGAGAGTGCATTC
                                                                                                                                                                                                                               . 1 ATGTCCATGTCATGTGGGGGCGCCAGCAACTGCGCGTACCACATGATGTCGCCC
                                                                                                                                                                                                                                                                                                                                                                                       CCGCCAGACAACTTCGACCACCGCAGAACATGGACCAGACCATTTCATGAAACAGCAGCG
                                                                                                                                                                                                                                                                                                                                                                                                      CCAGAGAACAGCACCAGGCTCACAGGGAGGTGGACGCAGGGGGGCCAACACATGGCTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTAGTGCAGCCACCGG-----CAAGAGCCCACATCGTGCCATTTCACGGAGGTGCATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCCATTATCCCACAATGCAGAGAGAGAGCGAGCGAAGGTGATGAGGTATAGGGAGAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCTATAATCCAACGATGCAGGAGAGGAGGCGAAGGTGATGAGGTACAGGGAGAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGAGGCGCCCTATGACAAGCAAATCCGCTACGAGTCCCAGAAAGCTTACGCCGAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGGCCATGGGTCAACGGCCGCTTTGTCAAGGTACCCGAAGCCATGGCATCGCCATCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            535 AGGCCACGGGTCAATGGCCGCTTTGCCAAGGTGCCCGAAGCCGTTGTGTCTCACCC
                                                                                                                                                                                                                                                                        ATTCACCATCATCATCACCATCATCAGGAGCACCAGCTGTGTGAGTACCAGTTCTTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAGGGAACAGCAGCAGGCTCACGCTGGAGGTGGGCGCAGGCGGCCAACACATGGCTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCAACACTATTAGCAATGAAGCAATCATGACTATTGACACAGAGATGATGGTGGGGGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCAGCACTATTAGCAACGCAACGATCATGACTATTGATACAGAAATGATGGTGGGGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGAGGCGCCCTATGACAAGCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTT
                                                                                                                                                                                                                ATGTCCATGTCATGCGGTTTGTGCGGCGCCAACAACTGCCCGCGCCCTCATGGTCTCGCCC
                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
APPLICANT: Dubcovsky, Jorge
APPLICANT: Yan, Luiding
APPLICANT: Loukoianov, Artem
TITLE OF INVENTION: GENES RESPONSIBLE FOR VERNALIZATION
TITLE OF INVENTION: REGULATION IN TEMPERATE GRASSES AND USES THEREOF
FILE REFERENCE: 514112000320
CURRENT APPLICATION NUMBER: US/10/723,947
CURRENT FILING DATE: 2003-11-26
                                                                                                                                                                                     15;
                                                                                                                                                           Length 639;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAACTTCCCCCCATGATCCTAGTAAACTTCACCTCGGATGGTTC 639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAGCTTCGCCCTATGATCCTAGTAAACTTCACCTCGGATGGTTC 744
                                                                                                                                                                                     Indels
                                                                                                                                                         Score 449; DB 8; 1
Pred. No. 1.9e-120;
                                                                                                                                                                                     0; Mismatches
  CURRENT FILING DATE: 2003-11-26
PRIOR APPLICATION NUMBER: US 10/412,137
PRIOR FILING DATE: 2003-04-11
NUMBER OF SEQ ID NOS: 159
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 88
LENGTH: 639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 82, Application US/10723947
Publication No. US20040205848A1
                                                                                                                                                         45.1%;
llarity 84.5%;
Conservative
                                                                                                 TYPE: DNA
ORGANISM: Hordeum vulgare
US-10-723-947-88
                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 8
US-10-723-947-82
                                                                                                                                                                                     545;
                                                                                                                                                                                                                109
                                                                                                                                                                                                                                                                       169
                                                                                                                                                                                                                                                                                                   19
                                                                                                                                                                                                                                                                                                                               229
                                                                                                                                                                                                                                                                                                                                                                                     286
                                                                                                                                                                                                                                                                                                                                                                                                                 175
                                                                                                                                                                                                                                                                                                                                                                                                                                             346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          700
                                                                                                                                                         Query Match
Best Local 3
                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     595
                                                                                                                                                                        Best Loca
Matches
                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

```
228
                                                                                                                                                                                                                                                                                                             288
                                                                                                                                                                                                                                                                                                                                                                                                                   348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              642
                                                                                                                                                                                                                                                             111
                                                                                                                                                                                                                                                                                                                                                                171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGAACAGCAGCCTCACGCTGGAGGTGGGCGCGCGGCGGCCAACACATGGCTCACCTA 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATAATCTGACGATGCAGGAGAGAGGGGAAGGTGATGAGGTACAGGGAGAAGAGGAAG 471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  591
                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATTATCCCACAATGCAGGAGAGCAGCGAAGGTCATGAGGTATAGGGAGAAGAGGAAG
                                                                                                                                                                                                                                          292 CTGCAGCCACCGGCACGCCCAAGAACCACCATCGTGCCATTCTGCGGGCTGCATTCACC
                                                                                                                                                         1 ATGICCATGICATGCGGTTTGTGCGGCGAAGCGACTGCCCGCACCACATGATCTCGCCC
                                                                                                                                                                                                                                                                                                             CATGGCAACCACCACCACCACCATGGCTCGGCAGCAGACTACCCAGTGCCACCGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                      CCAGACAACTICGACCACGCAGAACAIGGACCAGACCAITICAIGAAACAGCAGCGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACACTATTAGCAATGAAGCAATCATGACTATTGACACAGAGATGATGGTGGGGGCCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCACTATTAGCAATGCAACAATCATGACTATTGATACAGAGATGATGGTGGGGGGCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGCGCCCTATGACAAGCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              472 AGGCGGTGCTATGACAAGCAAATCCGCTACGAGTCCAGAAAAGCTTACGCCGAGCTCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCATGGGTCAACGGCCGCTTTGTCAAGGTACCCGAAGCCATGGCATCGCCATCATCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  532 ccaceeercaarescrecrrrercaaeeraccaeaaeccecrecateercercercec
                                                                                                                                                                                                       169 ATTCACCATCATCACCATCACCAGCAGCACCAGCTGTGTGAGTACCAGTTCTTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGCAGCCACCGG-----CAAGAGCCCACATCGTGCCATTTCACGGAGGTGCATTCACC
                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   THEREOF
                                                     15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTTCGCCCTATGATCCTAGTAAACTTCACCTCGGATGGTTCCAGTA 638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Dubcovsky, Jorge
APPLICANT: Yan, Liuling
APPLICANT: Yan, Liuling
APPLICANT: Yan, Liuling
APPLICANT: Loukolanov, Artem
TITLE OF INVENTION: RESPONSIBLE FOR VERNALIZATION
TITLE OF INVENTION: REGULATION IN TEMPERATE GRASSES AND USES
FILE REFERENCE: 514112000320
CURRENT APPLICATION NUMBER: US/10/723,947
CURRENT FILING DATE: 2003-11-26
PRIOR APPLICATION NUMBER: US 10/412,137
  Length 639;
                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTTCGCCCTATGATCCTAGTAAACTTCACCTCGGATGGTTCCGGTA
Score 445; DB 8; L
Pred. No. 2.8e-119;
0; Mismatches 95;
```

ä

```
; TYPE: DNA; ORGANISM: Triticum monococcum
US-10-723-947-81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-723-947-90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 2043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               916
                                                                                                                                                                                                                                                                                     556
                                                                                                                                                                                                                                                                                                                                                                                                                               9/9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         196
                                                                                                                                                                            유
                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                           ò
                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ద
                                                                                                                                                                                                                                                                   2704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2963 -----------TTCATCATCAAAGTAAAATAAGTTATTGTTTGTTTGACCGA 3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3001 TGGGAGGAGTTATGTTTGACTATTTCAAAAGGTCAGCAGACCAATCAAAGAAATG 3060
                                                                                                                                                                                                                                                                                                                            2765 GTGATGAGGTACAGGGAGAAGAGGAAGAGGGGGGTGCTATGACAAGCAAATCCGCTATGAG 2824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2825 rccagaaaagcrracgccgagcrcaggccacggrcaarcgcccrrrgrcaaggracca 2884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2885 GAAGCCGCTGCATCGTCGTCACCCCCAGCTTCGCCCTATGATCCTAGTAAACTTCACCTC 2944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3061 TATTTGTTGAAACAAGTATTGTTATGCTTTATGTTAATTTTAAGCATGTAGTTTGAGGAGG 3120
                                                                                                                                                                                                                                  495
                                                                                                                                                                                                                                                                                                                                                                              615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  736 GGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAACATATTTCCTTCTGAT 795
                                                                                                                                                                                                                                                                                                      GACACAGAGATGATGGTGGGGCCTGCCCATTATCCCACAATGCAGGAGAGAGCAGCGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TATTTATTGAAACAAGTCTTGTTATACTACGTGTTGATTTTAAACATGTAATTTCAAGAGG
                                                                                                                                                                                                                                                                   2645 GTGCCATTCTGCGGGGCTGCATTCACCAGCACTATTAGCAATGCAACGATCATGACTATT
                                                                                                                                                                                                                                                                                                                                                                              GTGATGAGGTATAGGGAGAAGAGGAAGAGGCGCGCCTATGACAAGCAAATCCGATACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAGCCATGGCATCGCCATCTCCCAGCTTCGCCCTATGATCCTAGTAAACTTCACCTC
                                                                                                                                                                                                                                436 GIGCCATITCACGGAGGIGCATICACCAACACTATTAGCAATGAAGCAATCATGACTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 81, Application US/10723947
Publication No. US20040205848A1
GERREAL INFORMATION:
GERREAL INFORMATION:
APPLICANT: Dubcovsky, Jorge
APPLICANT: Dubcovsky, Jorge
APPLICANT: Duckoianov, Artem
TITLE OF INVENTION: GENES RESPONSIBLE FOR VERNALIZATION
TITLE OF INVENTION: REGULATION IN TEMPERATE GRASSES AND USES THEREOF
FILE REFERENCE: 514112000320
CURRENT APPLICATION NUMBER: US 10/723,947
CURRENT FILING DATE: 2003-11-26
PRIOR APPLICATION NUMBER: US 10/412,137
                                                                                                                                                                                               64;
                                                                                                                                                              Length 3454;
                                                                                                                                                                                               Indels
                                                                                                                                                            Score 320.8; DB 8;
Pred. No. 1.7e-82;
0; Mismatches 62;
-PRIOR FILING DATE: 2003-04-11
NUMBER OF SEQ ID NOS: 159
SOFTWARE: PastSEQ for Windows Version 4.0
SEQ ID NO 84
LENGTH: 3454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQ ID NOS: 159
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 81
LENGTH: 5734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3121 craccracriadarcrer 3138
                                                                                                       ; ORGANISM: Triticum dicoccoides US-10-723-947-84
                                                                                                                                                          Query Match
Best Local Similarity 77.4%;
Matches 432; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2945 GGATGGTTCCGGTAGTTT-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          976 ATAGCTACTTTGATGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 10
US-10-723-947-81
                                                                                                                                                                                                                                                                                                                                                                                                                                                  919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      916
                                                                                                                                                                                                                                                                                                                                                                            556
                                                                                          TYPE: DNA
                                                                                                                                                                                                                                                                                                      496
                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                     원
                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     임
```

```
4480
                                                                                                                                                                                                             4124
                                                                                                                                                                                                                                                                                              4184
                                                                                                                                                                                                                                                                                                                                                                                 4244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4360
                                                                                                                            4064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              975
                                                                                                                                                                                                                                                       615
                                                                                                                                                                                                                                                                                                                                          675
                                                                                                                                                                                                                                                                                                                                                                                                                           735
                                                                                   495
                                                                                                                                                                   555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            855
                                                                                                                                                                   GTGATGAGGTATAGGGAGAGAGAGAGAGGCGGCGCTATGACAAGCAAATCCGATACGAG
                                                                                                                                                                                                                                                                                 616 TCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTACCC
                                                                                                                                                                                                                                                                                                                                                                  1185 TCCAGAAAAGCTTACGCCGAGCTCAGGCCCACGGGTCAATGGCTGCTTGTCAAGGTACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  245 GAAGCCGCTGCATCGTCGTCACCCCCAGCTTCGCCCTATGATCCTAGTAAACTTCACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGATGGTTCCGGTAATTTATAGCACAAGCCAGATAAAATGATAACATATTTCCTTCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ------TTCATCAAAGTAAATTAGTTTGTTTGATTGACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             856 TTGGAGCCATTATGTTGACTTGACTATTTAAAATGGTCAGCAGATCAAATCAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATTTATTGAAACAAGTCTTGTTATACTACGTGTTGATTTAAACATGTAATTTCAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        436 GTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTATT
                                                                                                                                                                                                                                                                                                                                                                                                                           GAAGCCATGGCATCGCCATCTCCAGCTTCGCCCTATGATCCTAGTAAACTTCACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Yan, Liuling Artem
APPLICANT: Loukcianov, Artem
TITLE OF INVENTION: GENES RESPONSIBLE FOR VERNALIZATION
TITLE OF INVENTION: REGULATION IN TEMPERATE GRASSES AND USES THEREOF
FILE REPERBNCE: 51411200032
CURRENT APPLICATION NUMBRS: US/10/723,947
CURRENT FILING DATE: 2003-04-11
PRIOR APPLICATION NUMBRS: US/10/412,137
NUMBER OF SEQ ID NOS: 159
SOFTWARE: FRAESEQ for Windows Version 4.0
SEQ ID NO 90
SEQ ID NO 90
SEQ ID NO 90
SEQ ID NO 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: DNA
ORGANISM: Hordeum vulgare
PEATURE:
LOCATION: 1105, 1156, 1190, 1197, 1209, 1237, 1238, 1239, 1240, 1241,
                                           64;
Length 5734;
                                         Indels
                                           62;
Score 320.8; DB (
Pred. No. 2.2e-82, 
0; Mismatches 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 90, Application US/10723947 Publication No. US:20040205848A1 GENERAL INFORMATION: APPLICANT: Dubcovsky, Jorge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1305 GGATGGTTCCAGTAGTTT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1481 CTAGCTACTTAGATGTGT 4498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               993
  Query Match 32.2%;
Best Local Similarity 77.4%;
Matches 432; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               976 ATAGCTACTTTGATGTGT
```

243

420

584

```
and Other Molecules Associated With
                                                                                                                                411 CACCATCATCAGAACACCCCACTGCAGTACCAGTTCTTCGCCCAAGG-----TCAC 464
                                                                                                                                                                                          CACCACCACCATGGCTCGGCAGCAGCTACCCAGTGCCACCG---CCGCCAGACATTC 300
                                                                                                                                                                                                                                                                                301 GACCACCGCAGAACATGGACCAGACCATTTCATGAAACAGCAGCGGCAGGGAACAGCAGC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     651 CAACGGCCGCTTTGTCAAGGTACCCGAAGCCATGGCATCGCCATCATCTCCCAGCTTCGCC 710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             765 GAGAGGICGCITCGCCAAAGAACCIGA---TCAGGAAGCIGICGCACCGCCAICCACCIA 821
                                                                                                                                                                                                                                                                                                                                                                   361 AGGCTCACGCTGGAGGTGGGCGCAGCGCCAACACATGGCTCACCTAGTGCAGCCACCG
                                                               351 GGTTTGTGCGGCGCCAGCAACTGCGCGTACCACATGATGTCGCCCCGTTCTTCTTCATCAT
                                                                                                         CACCATCATCAGGAGCACCAGCTGTGTGAGTACCAGTTCTTCGCCCATGGCAACCACCAC
                                                                                                                                                                                                                     CACCACCACACAGGGGGGGAGGGGGACTACCCACCACCACGCCACCAGCAGACAATTGC
                                                                                                                                                                                                                                                                                                             525 CACCACCACAGATCATGGACCACGCCGTTTCATGAAACAGCAGCTCCAGAGAACAGCACC
                                                                                                                                                                                                                                                                                                                                                                                                              585 AGGCTCACACGGGAGGTGGACGCAGGCCCAACACATGGCTCACCTGCTGCAGCCACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    531 CACAATGCAGGAGAGAGCAGCGAAGGTGATGAGGTATAGGGAGAAGAGAGAAGAGGCGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 591 CTATGACAAGCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Kovalic, David K.
APPLICANT: Kovalic, David K.
APPLICANT: Cao, Yongwei
APPLICANT: Cao, Yongwei
APPLICANT: Wu, Wei
APPLICANT: Barbaruk, Brad
APPLICANT: Barbaruk, Brad
APPLICANT: Barbaruk, Brad
APPLICANT: Li, Ping
TITLE OF INVENTION: Plante Nucleic Acid Molecules and Other Molecules Assi
TITLE OF INVENTION: Plante and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21 (532218 and CURRENT APPLICATION NUMBER: US/10/437,963
CURRENT APPLICATION NUMBER: US/10/437,963
CURRENT FILING DATE: 2003-05-14
NUMBER OF SEQ ID NOS: 204966
SEQ ID NO 83163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       , OTHER INFORMATION: Clone ID: PAT_MRT4530_82521C.1
US-10-437-963-83163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 92.8; DB 7;
Pred. No. 4.9e-16;
0; Mismatches 62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            711 CTATGATCCTAGTAAACTTCACCTCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     822 rercearceracraecerreae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 83163, Application US/10437963
Publication No. US20040123343A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Match 9.3%;
Local Similarity 68.8%;
Les 143; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA
ORGANISM: Oryza sativa
                                                                                                                                                                                                                                                                                                                                                                                                                                                    184
                                                                                                                                                                                             244
                                                                                                                                                                                                                                     465
                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Loca
Matches
                                                      g
                                                                                                       ઠ
                                                                                                                                       q
                                                                                                                                                                             ठे
                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                              ठ
                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2034
                                                                                                                                                                                                                                                                                                                                           1735 Greccarrececeseagrecarreaceaecarrarageaeceaaesareareararr 1794
                                                                                                                                                                                                                                                                                                                                                                                                              1855 GTGATGAGGTACAGGGAGAAAGAGGGGGCGCCTATGACAAGCAAATCCGCTACGAG 1914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    676 GAAGCCATGGCATCGCCATCATCTCCAGCTTCGCCCTATGATCCTAGTAAACTTCACCTC 735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACAPACAPACTAGCAPACAAGCAPACGTTGGAGTTAGCT-GCAGTATGTCCATGTCATGT 350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 87, Application US/10723947

Publication No. US20040205848A1

GENERAL INFORMATION:

APPLICANT: Dubcovsky, Jorge

APPLICANT: Van, Liuling

APPLICANT: Loukcianov, Artem

TITLE OF INVENTION: REGULATION IN TEMPERATE GRASSES AND USES THEREOF

FILE REFERENCE: 514112000320

CURRENT APPLICATION NUMBER: US 10/12/3947

CURRENT FILING DATE: 2003-11-26

PRIOR PLILATION NUMBER: US 10/412,137

PRIOR PLILATION NUMBER: US 10/412,137

PRIOR PLILATION NOWER: 159

SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                     GACACAGAGATGATGGTGGGGCCTGCCCATTATCCCACAATGCAGGAGAGAGCAGCGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTTTGTCAAGGTACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1975 GAAGCCGCTGCGTCACCATCACCCCCCAGCTTCGCCCCATGATCTAGTGAACTTCACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGATGAGGTATAGGGAGAAGAGGAGAAGAGGCGCCCTATGACAAGCAAATCCGATACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4 CTGCCTCTTCTTCTTCCTCGACGTCTCCTCCTCGGCTCCTCCACGCACCAGACCACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    crercricricriccreacarcrercreacaca-----caccacacacacacacaca
                                                                                                                                                                                                                                                                                                  436 GTGCCATTTCACGGAGGTGCATTCACCAACACTATTAGCAATGAAGCAATCATGACTATT
                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16;
                                                                                                                                                                                                                                                       ;
0
                                                                                                                                                                                                                 Length 2043;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 247.6; DB 8; Length 1985;
Pred. No. 3.4e-61;
0; Mismatches 64; Indels 16;
LOCATION: 1242, 1243, 1244, 1245, 1246, 1247, 1248, 1249, 1260AIION: 1252, 1253, 1254, 1255, 1256, 1257, 1258, 1259, LOCATION: 1262, 1263, 1264, 1265, 1294, 1300, 1313, 1326, OTHER INFORMATION: n = A,T,C or G
                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                               Score 251.4; DB 8;
Pred. No. 2.7e-62;
0; Mismatches 36;
                                                                                                                                                  or G
                                                                                                     NAME/KEY: misc_feature

: LOCATION: 1359, 1385

: OTHER INFORMATION: n = A,T,C

US-10-723-947-90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ouery Match 24.9%;
Best Local Similarity 81.0%;
Matches 342; Conservative
                                                                                                                                                                                                            Query Match
25.2%;
Best Local Similarity 88.3%;
Matches 273; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA
ORGANISM: Hordeum vulgare
US-10-723-947-87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGATGGTTC 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGATGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 12
US-10-723-947-87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQ ID NO 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   64
                                                                                                                                                                                                                                                                                                                                                                                        496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          736
                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                              요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

```
g
                                                                                    a
                                             à
                                                                                                                                                                g
                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Wang, Xun
APPLICANT: Zhu, Tong
TITLE OF INVENTION: STRESS-REGULATED GENES OF PLANTS, TRANSGENIC PLANTS CONTAINING
TITLE OF INVENTION: SAME, AND METHODS OF USE
FILE REFERENCE: SCRIP1300-3
CURRENT APPLICATION NUMBER: US/09/938,842A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               702 GGACCGGGAGGCGAAGGTGATGCGGTACAAGGAGAAGAGGAAAGAGGGGAGGCGATACGAGAA 761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        600 GCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCG ·659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                540 GGAGAGAGCAGCGAAGGTGATGAGGTATAGGGAAGAGAAGAGAAGAGGCGGCGCTATGACAA
                                                                                                                                                                  APPLICANT: Li, Ping
TITLE OF INVENTION: Rice Nucleic Acid Molecules and Other Molecule
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(5321)8
CURRENT APPLICATION NUMBER: US/10/437,963
CURRENT FILING DATE: 2003-05-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               35; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                       , OTHER INFORMATION: Clone ID: PAT_MRT4530_81756C.1
US-10-437-963-82314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 86; DB 7; 1
Pred. No. 6.2e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: US 60/227,866
PRIOR FILING DATE: 2001-08-24
PRIOR FILING DATE: 2000-08-24
PRIOR APPLICATION NUMBER: US 60/264,647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR FILING DATE: 2001-01-16
PRIOR APPLICATION NUMBER: US 60/300,111
PRIOR FILING DATE: 2001-06-22
NUMBER OF SEQ ID NOS: 5379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 265, Application US/09938842A Patent No. US20020160378A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         660 CTTTGTCAAGGTACCCGAAGCC 681
                                                                                                                           Boukharov, Andrey A.
Barbazuk, Brad
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA ORGANISM: Arabidopsis thaliana
             La Rosa, Thomas J.
Kovalic, David K.
Zhou, Yihua
Cao, Yongwei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 75.4%;
Matches 107; Conservative
                                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS: 204966
SEQ ID NO 82314
LENGTH: 1413
                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: Oryza sativa FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             822
                                                                                                                           APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

Length 885;

DB 3;

7.7%; Score 76.6;

Query Match

```
| Best Local Similarity 62.1%; Pred. No. 2.8e-11; | Matches 121; | Conservative 0; Mismatches 74; Indels 0; Gaps 0; | Conservative 0; Mismatches 74; Indels 0; Gaps 0; | Conservative 0; Mismatches 74; Indels 0; Gaps 0; | Conservative 0; Mismatches 74; Indels 0; Gaps 0; | Conservative 0; | Conservativ
```

```
Sequence 5.2.
Sequence 549, Apr.
Sequence 13411, A
Sequence 13334, A
Sequence 13234, A
Sequence 1122, App.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 112, App
Sequence 27313, A
Sequence 27313, A
Sequence 809991,
Sequence 640012,
Sequence 7342, Ap
Sequence 7342, Ap
Sequence 24577, A
Sequence 26, Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 30, App.
                                                                                                                           ; Search time 405 Seconds
(without alignments)
5244.043 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                               1 taactgcctcttcttcc......tagctactttgatgtgtat 996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6/ptodata/1/pubpna/USO6_NEW_PUB.seq:*
6/ptodata/1/pubpna/USO7_NEW_PUB.seq:*
6/ptodata/1/pubpna/PEW_PUB.seq:*
6/ptodata/1/pubpna/USO9_NEW_PUB.seq:*
6/ptodata/1/pubpna/USO9_NEW_PUB.seq:*
6/ptodata/1/pubpna/USO9_NEW_PUB.seq:*
6/ptodata/1/pubpna/USIO_NEW_PUB.seq:*
6/ptodata/1/pubpna/USIO_NEW_PUB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cgn2 6/ptodata/1/pubpna/US11 NEW PUB.seq2.*
cgn2 6/ptodata/1/pubpna/US11 NEW PUB.seq3:*
cgn2 6/ptodata/1/pubpna/US11 NEW PUB.seq4:*
GenCore version 5.1.7
Copyright (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /cgn2_6/ptodata/1/pubpna/US60_NEW_PUB.seg:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /cgn2_6/ptodata/1/pubpna/US08_NEW_PUB.seq:*/cgn2_6/ptodata/1/pubpna/US06_NEW_PUB.seq:*/cgn2_6/ptodata/1/pubpna/US07_NEW_PUB.seq:*/cgn2_6/ptodata/1/pubpna/PCT_NEW_PUB.seq:*/cgn2_6/ptodata/1/pubpna/PCT_NEW_PUB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-995-561-13411
US-10-995-561-13234
US-10-995-561-13235
US-11-010-239-112
US-10-750-185-27313
US-10-750-623-27313
US-09-925-065A-809991
US-09-925-065A-6496012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NEW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-11-128-061-549
US-11-128-049-549
                                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                      7209121 segs, 1066183437 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ptodata/1/pubpna/US11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUMMARIES
                                                                                                                               February 23, 2006, 12:08:09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                    OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Published .Applications NA
                                                                                                                                                                                                                                                                                                      IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq length: 0
seq length: 200000000
                                                                                                                                                                                                             US-10-723-947-75
996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .4 162013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /cgn2_(cgn2_(cgn2_(
                                                                                                                                                                                                                                        Perfect score:
                                                                                                                                                                                                                                                                                                        Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     40.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 40.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Minimum DB
Maximum DB
                                                                                                                                                                                                                                                               Sequence:
                                                                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Darabase
                                                                                                                             Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Result
```

	50888	/111	888-30/c 30, Application US/11150888	/c oplica	RESULT 1 US-11-150-888-30/c ; Sequence 30, App	RESULT 1 US-11-150-8
	ALIGNMENTS					
, ,	US-11-124-327-1	13	3003		38.4	45
	10-453-372-	œ	1882	e.	38.4	44
27,	-10-453-372-2	œ	1882		æ	43
25,	0-453-372	œ	1882		38.4	42
23,	.0-453-372-	œ	1882		38.4	41
21	US-10-453-372-21	œ	1882		38.4	40
'n	.0-453-372-	œ	1882		38.4	39
Sequence 11, Appl	10-453	60	1765		38.4	38
٠,	10-453	œ	1765		æ	37
15,	-453	σ	1717		38.4	36
'n	-453	œ	1657		æ	35
6	US-10-453-372-9 .	œ	1627		38.4	34
26	US-09-925-065A-26497	9	629	•	38.4	
	US-09-925-065A-686881	9	2036	٠	8	c 35
	-09-925-065A-5865	9	507		38.6	
a 3357,	US-11-128-049-3357	12	2744	٠	æ.	30
a)	US-11-128-061-3357	12	2744	٠	ω.	29
26500,	19-925-065A-2650	9	629	•	ω.	
26499,	o	9	629		æ	c 27
26498,	-09-925-065A-2649	9	629	٠	8	
6669	US-11-128-049-6999	12	600	٠		25
6669	-128-061	12	009	•	œ.	24
e 3891,	-11-136-527	12	7764	٠	39	23
12846,	US-09-925-065A-12846	ø	518		39	22
	0-006-377-77-6	7	737/R3	٠	39.5	21

APPLICANT: Littman, Daniel TITLE OF INVENTION: Methods and Agents for Maintaining TITLE OF INVENTION: Muscle Mass and for Preventing Muscle Atrophy and Biomarkers TITLE OF INVENTION: for Monitoring Same FILE REFERENCE: 1049-1-048N CURRENT APPLICATION NUMBER: US/11/150,888 CURRENT FILING DATE: 2005-06-10 PRIOR FILING DATE: 2004-06-10 NUMBER OF SEQ ID NOS: 31 SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 30 LENGTH: 162013 TYPE: DNA ORGANISM: Homo sapiens US-11-150-888-30

104868 CACCACCATCACCATCACCACTACC 104842

Sequence 62, Application US/11121086 Publication No. US20050266459A1 GENERAL INFORMATION:

US-11-121-086-62

APPLICANT: POULSEN, TIM S. APPLICANT: NIELSEN, KIRSTEN V.

232 GGCAACCACCACCACCACCATGGC

q ö g

172 CACCATCATCATCACCATCATCAGGAGCACCAGCTGTGTGAGTACCAGTTCTTCGCCCAT

ö

Gaps

. .

Indels

Score 43.8; DB 12; Pred. No. 0.72; 0; Mismatches 27;

ö

4.4%; larity 69.0%; Conservative (

Similarity

Query Match Best Local S Matches 60

60;

Length 162013;

```
APPLICANT: Sinacore, Martin S.
APPLICANT: Leonard, Mark W.
APPLICANT: Brown, Bugene L.
APPLICANT: Miller, Christopher P.
TITLE OF INVENTION: OLIGONUCLECTIDE ARRAYS TO MONITOR GENE EXPRESSION AND METHODS
TITLE OF INVENTION: MAKING AND USING SAME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: CARGILL, Michele et al.
APPLICANT: CARGILL, Michele et al.
TINTELLANTION: GENETIC POLYMORPHISMS ASSOCIATED WITH
TINVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH
TINVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            174 CCATCATCATCACCATCATCAGGAGCACCAGCTGTGTGAGTACCAGTTCTTCGCCCATGG 233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      234 CAACCACCACCACCACCATGGCTCGGCAGCAGACTACCCAGTGCCACCGCCGCGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             118 ccagcaccaccaccaccarccrarcaracregearacregaargreceecerca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 17263;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCITITE OF INVENTION: CARDIOVASCULAR DISORDERS AT ITLE OF INVENTION: DETECTION AND USES THEREOF FILE REFERENCE: CLOOISS9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 41.4; DB Pred. No. 0.32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4.1%; Score 41.2;
                                                                                                                                                                                                                                                                                                                                                                                                        FILE REFERENCE: 01997.027700
CURRENT APPLICATION NUMBER: US/11/128,049
CURRENT FILING DATE: 2005-05-11
PRIOR APPLICATION NUMBER: US 60/570,425
PRIOR FILING DATE: 2004-05-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQ ID NOS: 85702
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 13411
LENGTH: 17263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION NUMBER: US/10/995,561
CURRENT FILING DATE: 2004-11-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 13411, Application US/10995561 Publication No. US20050272054A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g, or
                                                                                                                     Sequence 549, Application US/11128049
                                                                                                                                                                                                          Charlebois, Timothy S. Mounts, William M. Hann, Louane E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQ ID NOS: 7285
SOFTWARE: Patentin version 3.3
SEQ ID NO 549
LENGTH: 908
                                                                                                                                          JS20060010513A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4.2%;
                                                                                                                                                                                  APPLICANT: Melville, Mark W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COTHER INFORMATION: 0.11-128-049-549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 57.33
Matches 75; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      178 CAAACCCCATC 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            294 CAACTICGACC 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: DNA
ORGANISM: Cricetulus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: misc_feature
LOCATION: (29)..(45)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -10-995-561-13411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Brown, Eugene L.
APPLICANT: Miller, Christopher P.
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES RELATED TO OLIGONUCLEOTIDE ARRAYS
TITLE OF INVENTION: TO MONITOR GENE EXPRESSION
FILE REFERENCE: 01997.027701
                                                                                                                                                                                                                                                                                                                                                                                                                 166 CCCATTCACCATCATCATCATCATCATCAGGAGCACCAGCTGTGTGAGTACCAGTTCTTC 225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     234 CAACCACCACCACCACCACCATGGCTCGGCAGACTACCCAGTGCCACCGCCGCCGCAGA 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              118 ccagcaccagcaccaccarccarsceracaracrassaracrassaracrassargcassas
TITLE OF INVENTION: NUCLEIC ACID PROBES AND NUCLEIC ACID ANALOG PROBES FILE REFERENCE: 09138.6000-00000
CURRENT APPLICATION NUMBER: US/11/121,086
CURRENT FILING DATE: 2005-55-94
PRIOR FILING DATE: 2004-05-04
PRIOR FILING DATE: 2004-05-04
NUMBER OF SEQ ID NOS: 107
SOFTWARE: Patentin version 3.3
SEQ ID NO 62
LENGTH: 200628
                                                                                                                                                                                                                                                                                                                   Length 200628;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 41.4; DB 12; Length 908;
Pred. No. 0.32;
                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              56; Indels
                                                                                                                                                                                                                                                                                                                      DB 12;
                                                                                                                                                                                                                                                                                                                                                                  29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     129644 CACCATCATCATCACCACCACCATCAT 129673
                                                                                                                                                                                                                                                                                                                          Score 43.6; DE
Pred. No. 0.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        226 GCCCATGGCAACCACCACCACCACCAT 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0, Mismatches
                                                                                                                                                                                                                                                                                                                                                                  0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CURRENT APPLICATION NUMBER: US/11/128,061
CURRENT FILING DATE: 2005-05-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: US 60/570,425
PRIOR FILING DATE: 2004-05-11
NUMBER OF SEQ ID NOS: 7285
SEG ID NO 549
LENGTH: 908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; LOCATION: (29) ... (45)
; . OTHER INFORMATION: n is a, c, g, or
US-11-128-061-549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Application US/11128061
5. US20060003958A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Charlebois, Timothy S. Mounts, William M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hann, Louane E.
Sinacore; Martin S.
Leonard, Mark W.
                                                                                                                                                                                                                                                                                                                      4.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 57.3,
Best Local Similarity 75, 57.3,
Annual Conservative
                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 67.8
Matches 61; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             294 CAACTTCGACC 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
ORGANISM: Cricetulus sp.
                                                                                                                                                                                                                               TYPE: DNA
ORGANISM: Homo sapiens
US-11-121-086-62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

Mon Feb

g

```
TITLE OF INVENTION: NUCLECTIDE SEQUENCES AND POLYPEPTIDES ENCODED THEREBY USEFUL TITLE OF INVENTION: MODIFYING PLANT CHARACTERISTICS FILE REFERENCE: 2750-1585PUS2 CURRENT APPLICATION NUMBER: US/11/010,239 CURRENT FILING DATE: 2004-12-09 PRIOR APPLICATION NUMBER: US 60/529,352 PRIOR APPLICATION NUMBER: US 60/529,352 SOFTWARE: Patentin version 3.3 SOFTWARE: Patentin version 3.3 SOFTWARE: Patentin version 3.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1146 gegagaageaagrefrtreaageracaaagagaaaceaaceaacregrefrtregaagaa 1205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 662
                                                                                                                                                1028 TTGGTTCTGTCATAATTAATCATCACCACTCCTTCACTGCCACTATTGCCATCATCACCA 969
                                                                                                                                                                                                                                                 126 TITGIGGGGGGCGAACAACTGCCCGCGCGCTCATGGTCTCGCCCATTCACCATCATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 603 AATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGGGTCAACGGCCGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1206 AATTCGATACCAAGTTCGCAAACTCAATGCTGATCAACGTCCTCGAATGAAGGGACGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             543 GAGAGCAGCGAAGCTGATGAGGTATAGGGAGAAGAGGAAGAGGCGCGCCGTATGACAAGCA
                                                    0; Gaps
                                                                                                                                                                                                                                                                                                   246 CCACCACCATGGCTCGGCAGCAGACTACCCAGTGCCACCGCCGCCAGACATT 299
                                                                                                                                                                                                                                                                                                                                                908 ccárrarccaccarcaccacradacrrarracraccarcacracaacarr 855
  Length 105550;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 41, DB 12, Length 15
Pred. No. 0.53;
0, Mismatches 60, Indels
                                                 Indels
                                               83;
  DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; LOCATION: (1).7(1544)
; OTHER INFORMATION: 12600234_construct_ID_YP0279
US-11-010-239-112
  Score 41.2; DB
Pred. No. 3.1;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 27313, Application US/10750185
Publication No. US20050260603A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 112, Application US/11010239 Publication No. US20060015970A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1266 CGTGAGAAGGCCCAATG 1282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Roger PENNELL
Jack OKAMURO
Richard SCHNEEBERGER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     663 TGTCAAGGTACCCGAAG 679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: DNA ORGANISM: Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4.1%;
  Query Match
Best Local Similarity 52.3%;
Matches 91; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Edward A. KIEGLE
Jonathan DONSON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 56.23
Matches 77; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Diane JOFUKU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Yiwen FANG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Shing KWOK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
APPLICANT:
                                                                                                                                              q
                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 . LOCATION: (1)...(93112)
; OTHER INFORMATION: n = A,T,C or G, or insertion/deletion polymorphism (see Tables 1-
US-10-995-561-13234
                                                                                                                                                                                                                       10077 CTACCACCTCCACCATCACCACTGCCACTATCATCACCACGATCATCACCACCACCACTA 10136
                                                                                                                        10017 TTGGTTCTGTCATAATTAATCATCACTCCTTCACTGCCACTATTGCCATCATCACCA 10076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 13235, Application US/10995561
Publication No. US20050272054A1
GENERAL INFORMATION:
TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH
TITLE OF INVENTION: CARDIOVASCULAR DISORDERS AND DRUG RESPONSE, METHODS OF
TITLE OF INVENTION: DETECTION AND USES THEREOF
FILE REFERENCE: CLO01559
CURRENT PILING DATE: 2004-11-24
NUMBER OF SEQ ID NOS: 85702
SOFTWARE: FaetSEQ for Windows Version 4.0
SEQ ID NO 13235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AND DRUG RESPONSE, METHODS OF
                                                                                                                                                                          186 CCATCATCAGGAGCACCAGCTGTGTGAGTACCAGTTCTTCGCCCATGGCAACCACCACCAC
                                                                         126 TTTGTGCGGCGCCAACAACTGCCCGCGCCTCATGGTCTCGCCCATTCACCATCATCATCA
                                                                                                                                                                                                                                                                                                                      10137 ccarrarccarcarcaccarragagirarracraccarcarcaaccaacarr 10190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                         246 CCACCACCATGGCTCGGCAGCAGACTACCCAGTGCCACCGCCGCCAGACATT 299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 93112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: GENETIC POLYMORPHISMS ASSOCIATED WITH TITLE OF INVENTION: CARDIOVASCULAR DISORDERS AND DRUG RESTITLE OF INVENTION: DETECTION AND USES THEREOF FILE.REFERENCE: CL001559
CURRENT APPLICATION NUMBER: US/10/995,561
CURRENT FILING DATE: 2004-11-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      33; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         83619 accaccarcarcaccaccaccarcarcarca 83652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            221 TCTTCGCCCATGGCAACCACCACCACCACCACCA 254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB
  Pred. No. 1.4;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 41.2; Di
Pred. No. 2.9;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQ ID NOS: 85702
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 13234, Application US/10995561 Publication No. US20050272054A1 GENERAL INFORMATION: APPLICANT: CARGILL, Michele et al.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 64.9
Matches 61; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: misc feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: DNA
COGGANISM: Homo sapiens
US-10-995-561-13235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JS-10-995-561-13235/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQ ID NO 13234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA
Best Local
Matches 9
```

요 ò

```
.
Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: MAI GENOMICS, INC.
APPLICANT: MAI GENOMICS, Sue K.
APPLICANT: NERR, Richard
APPLICANT: ROSENFELD, David
APPLICANT: HOLM, Tom
APPLICANT: Stephen
APPLICANT: RAITIN Dennis
TITLE OF INVENTION: METHODS AND SYSTEMS FOR INFERRING BOVINE TRAITS
                                                                                                                                                                                                                                                                                                                                                                                                               Length 7402;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 8; Length 7402;
                                                                       APPLICANT: BATES, Stephen
APPLICANT: BATES, Stephen
APPLICANT: FANTIN, Dennis
TITLE OF INVENTION: COMPOSITIONS FOR INFERRING BOVINE TRAITS
FILE REFERENCE: MAIL1100-2
CURRENT APPLICATION NUMBER: US/10/750,185
CURRENT FILING DATE: 2003-12-31
PRIOR APPLICATION NUMBER: US 60/437,482
PRIOR APPLICATION NUMBER: 206-12-31
NUMBER OF SEQ ID NOS: 64922
SOFTWARE: PetentIN version 3.1
LENGTH: 7402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27, Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                   DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 40.8; DB; Pred. No. 1.2; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                               Score 40.8;
Pred. No. 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILE REFERENCE: MM11100-1
CURRENT APPLICATION NUMBER: US/10/750,623
CURRENT FILING DATE: 2003-12-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2028 CATGACCACCATCACCACCATCAT 2051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2028 CATGACCACCATCACCATCAT 2051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION NUMBER: US 60/437,482
PRIOR FILING DATE: 2002-12-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     232 GGCAACCACCACCACCACCAT 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 27313, Application US/10750623
Publication No: US20050287531A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; TYPE: DNA
; ORGANISM: Bovine 19866880890824
US-10-750-623-27313
                                                                                                                                                                                                                                                                                                                                                  Bovine 19866880890824
                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 67.9%;
Matches 57; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQ ID NOS: 64922
SOFTWARE: PatentIN version 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 67.9%;
Matches 57; Conservative
                                  ROSENFELD, David
DeNISE, Sue K.
KERR, Richard
                                                                                                                                                                                                                                                                                                                             ; TYPE: DNA
; ORGANISM: Bovin
US-10-750-185-27313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQ ID NO 27313
LENGTH: 7402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
```

RESULT 11

```
138 CAACAACTGCCCGCGCCTCATGGTCTCGCCCATTCACCATCATCACCATCATCAGGA 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        198 GCACCAGCTGTGTGTACCA-GTTCTTCGCCCATGGCAACCACCACCACCACCACCATG 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  257 GCTCGGCAGCAGCTACCCAGTGCCACCGCCGCCAGACATTCGACCACACAGAACAT 316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12 ccarcacaaccaccercacracaacrecececececercacearaaccacareca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              132 AGTAGTACCGTCACTACAACCACCTCCACCACCACCAATTCCATCACCAGCTCCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 26496, Application US/09925065A
Publication No. US20040181048A1
GENERAL INFORMATION:
APPLICANT: Wang, US Identification and Mapping of Single
TITLE OF INVENTION: Nucleotide Polymorphisms in the Human Genome
FILE REFERENCE: 108827.135
CURRENT APPLICATION NUMBER: US/09/925,065A
CURRENT FILES OF INVENTION NUMBER: US/09/925,065A
APPLICANT: Wang, David G.
TITLE OF INVENTION: Identification and Mapping of Single
TITLE OF INVENTION: Nucleotide Polymorphisms in the Human Genome
FILE REFERENCE: 108827.135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 40; DB 6; Length 565
Pred. No. 0.63;
1; Mismatches 101; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              317 GGACCAGACCATTTCATGAAACAGCAGCGCAGG 350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          192 gectragectricicricraacacaageaga 225
                                                                                                                                                                                                                                                                              PRIOR FILING DATE: 2000-11-20
PRIOR PILING DATE: 2000-11-20
PRIOR PILING DATE: 2000-11-30
PRIOR FILING DATE: 2000-11-30
PRIOR APPLICATION NUMBER: US 60/261,766
PRIOR FILING DATE: 2001-01-16
PRIOR FILING DATE: 2001-05-09
NUMBER OF SEQ ID NOS: 957086
SOFTWARE: PRESEQ for Windows Version 4.0
SEQ ID NO 809991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION NUMBER: US 60/243,096
PRIOR FILING DATE: 2000-10-24
PRIOR FILING DATE: 2000-11-20
PRIOR PELING DATE: 2000-11-20
PRIOR PELING DATE: 2000-11-20
PRIOR PELING DATE: 2000-11-30
PRIOR PELING DATE: 2000-11-30
PRIOR PELING DATE: 2001-01-6
PRIOR PELING DATE: 2001-01-6
PRIOR PELING DATE: 2001-01-16
PRIOR PELING DATE: 2001-01-16
PRIOR PELING DATE: 2001-05-09
NUMBER OF SEQ ID NOS: 957086
SEQ ID NO 26496
                                                                                                                        CURRENT APPLICATION NUMBER: US/09/925,065A CURRENT FILING DATE: 2001-08-08 PRIOR APPLICATION NUMBER: US 60/243,096 PRIOR FILING DATE: 2000-10-24 PRIOR APPLICATION NUMBER: US 60/252,147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 51.9%;
Matches 111; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JS-09-925-065A-26496/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-925-065A-809991
```

us-10-723-947-75.rnpbn

```
completed: February 23, 2006, 12:15:03
ne : 406 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Search co
Job time
                                                                                                                                                                                                                                                                                          쉽
                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ద
                                                                                                                                                                                    157 ATGGTCTCGCCCATTCACCATCATCACCATCATCAGGAGCACCAGCTGTGAGTAC 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CACCATCATCATCACCATCAGGAGCACCAGCTGTGTGAGTACCAGTTCTTCGCCCAT
                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: Probe Arrays For Expression Profiling of Rat Genes FILE REFERENCE: 031896-041000 (AM101086)
CURRENT APPLICATION NUMBER: US/11/136,527
CURRENT FILING DATE: 2005-05-25
PRIOR APPLICATION NUMBER: US 60/574,294
PRIOR FILING DATE: 2005-05-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Wang, David G. TITLE OF INVENTION: Identification and Mapping of Single TITLE OF INVENTION: Nucleotide Polymorphisms in the Human Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 628;
                                                                                                                                             36; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                       217 CAGTICITCGCCCAIGGCAACCACCACCACCACCACCA 254
                                                                                                                                                                                                                                                                                                   CACCACCACTACCACCACCACCACCACCACTAAACA 33
                                                                                                    DB 6;
                                                                                                 Score 40; DB 6;
Pred. No. 0.68;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: US 60/252,147
PRIOR FILING DATE: 2000-11-20
PRIOR PELING DATE: 2000-11-30
PRIOR APPLICATION NUMBER: US 60/250,092
PRIOR APPLICATION NUMBER: US 60/261,766
PRIOR PILING DATE: 2001-01-16
PRIOR FILING DATE: 2001-01-16
PRIOR FILING DATE: 2001-01-05
NUMBER OF SEQ ID NOS: 957086
SOFTWARE: FREESEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ILE REFERENCE: 108827.135
URRENT APPLICATION NUMBER: US/09/925,065A
URRENT FILING DATE: 2001-08-08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 39.8;
Pred. No. 0
                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 640012, Application US/09925065A
Publication No. US20040181048A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       URRENT FILING DATE: 2001-08-08
RIOR APPLICATION NUMBER: US 60/243,096
RIOR FILING DATE: 2000-10-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  232 GGCAACCACCACCACCACCA 254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CACCACCACCAACACCACCA 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 7342, Application US/11136527
Publication No. US20050287570A1
GENERAL INFORMATION:
                                                                                Query Match
Best Local Similarity 62.2.,
hes 61; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Wyeth APPLICANT: Mounts, William M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                 TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Homo sapiens US-09-925-065A-640012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                          US-09-925-065A-26496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -11-136-527-7342/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ ID NO 640012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    26;
                                                                                                                                                                                                                                                                                                              70
LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                       ò
```

```
162 CTCGCCCATTCACCATCATCATCACCATCATCAGGAGCACCAGCTGTGAGTACCAGTT 221
                                                                                                                                                                                                                                          162 CTCGCCCATTCACCATCATCATCACCATCATCAGGAGCACCAGCTGTGTGAGTACCAGTT 221
                                                                                                                                                                                                                                                                                APPLICANT: Mounts, William M
TITLE OF INVENTION: Forbe Arrays For Expression Profiling of Rat Genes
FILE REFERENCE: 031986-041000 (AM101086)
CURRENT APPLICATION NUMBER: US/11/136,527
CURRENT FILING DATE: 2005-05-25
PRIOR APPLICATION NUMBER: US 60/574,294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1428;
                                                                                                                                                          Length 600;
                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                            Score 39.6; DB 12;
Pred. No. 0.84;
0; Mismatches 34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1260 ccarcarcarcarcarcarcaccaccaccarcar 1227
                                                                                                                                                                                                                                                                                                                                                        432 CCATCATCATCATCATCACCAGCATCAT 399
                                                                                                                                                                                                                                                                                                                          222 CTTCGCCCATGGCAACCACCACCACCACCACCAT 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          222 CTTCGCCCATGGCAACCACCACCACCACCAT 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 39.6; DB
Pred. No. 1.2;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 3246, Application US/11136527
Publication No. US20050287570A1
GENERAL INFORMATION:
NUMBER OF SEQ ID NOS: 362830
SOFTWARE: Patentin version 3.2
SEQ ID NO 7342
LENGTH: 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQ ID NOS: 362830
SOFTWARE: Patentin version 3.2
SEQ ID NO 3246
LENGTH: 1428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4.0%;
1. Similarity 63.8%;
60; Conservative
                                                                                                                                                            4.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; TYPE: DNA
; ORGANISM: Rattus norvegicus
US-11-136-527-3246
                                                                                ; TYPE: DNA
; ORGANISM: Rattus norvegicus
US-11-136-527-7342
                                                                                                                                                                                                    60; Conservative
                                                                                                                                                            Query Match
Best Local Similarity
Matches 60; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-11-136-527-3246/c
```

40, Appl 26389, A 157740,

Sequence

Scoring table:

Sequence:

Title:

Minimum DB Maximum DB

OM protein -

Sequence

17, Appl 14597, A

Sequence Sequence

Sequence

Sequence Sequence Sequence

84, App 83163, 34955,

Sequence Sequence Sequence

Sequence

Sequence

7, Appli 13864, A

Sequence

Sequence

Sequence Sequence

Sequence Sequence

5473, Ap 12421, A 5, Appli 14609, A

Sequence

8013, Ap 225, App 101201, 33981, A 14874, A

Sequence Sequence Sequence

Sequence Sequence Sequence

Sequence

403, App 22406, A

Sequence Sequence Sequence

1, Appli

Sequence

30197,

Sequence

equence

```
Sequence 75, Application US/10723947

Sequence 75, Application US/10723947

Publication No. US20040205848A1

GENERAL INFORMATION:

APPLICANT: Dubcovsky, Jorge

APPLICANT: Yan, Liuling

APPLICANT: Yan, Liuling

TITLE OF INVENTION: REGULATION IN TEMPERATE GRASSES AND USES THEREOF

TITLE OF INVENTION: GENES RESPONSIBLE FOR VERNALIZATION

TITLE OF INVENTION: QENES RESPONSIBLE FOR VERNALIZATION

CURRENT APPLICATION NUMBER: US/10/723,947

CURRENT FILING DATE: 2003-11-26

PRIOR PLICHING DATE: 2003-04-11

NUMBER OF SEQ ID NOS: 159

SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        996
185
Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-143-849-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1.56e-111
1035.00
99.5%
98.9%
98.8%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA ORGANISM: Triticum monococcum
    22913
109823
34534
9654
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
10991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
Best Local Similarity:
Query Match:
DB:
    Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-723-947-75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQ ID NO 75
LENGTH: 996
    670.5
57590
547.5
547.5
232.5
204
204
194
192
                                                                                                                                                                                                                                                                                       189.5
189.5
186.5
186.5
184.5
184.5
181.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            179.5
177.5
176.5
176.5
176.5
176.5
176.5
176.5
176.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Command line parameters:
-MODEL=frame+ p2n.model -DEV=xlp
-MODEL=frame+ p2n.model -DEV=xlp
-G-ABSS/ABSS/BES ppool/US10723947/runat_23022006_085407_16435/app_query.fasta_1
-DB=Published AppLications NA Main -OFWT=fastap -SUFFIX=p2n.rnpbm
-MINMATCH=0.1 -LOOPCL=0 -LOOPEXT=0 -UNITS=bits -START=1 -END=-1
-TABATRIX=blosume2 - TRANS=humanap od. cdi -LIST=45 -DOCALIGN=200 -THR SCORE=pct
-THR MAX=100 -THR MIN=0 -ALIGN=15 -MODE=LOCAL -OUTFWT=pto -NORM=ext
-HEAFSIZE=500 -MINLEN=0 -MAXLEN=2000000000 -HOST=abss03p
-NORR=-SURTO3947 - ALIGN=15 -MODE=LOCAL -OUTFWT=pto -NORM=ext
-NORR=-SURTO303947 - ALIGN=15 -MODE=LOCAL -OUTFWT=pto -NORM=ext
-NORR=-SURTO303947 - ALIGN=15 -MAXLEN=2000000000 -HOST=abss03p
-NORR=-SURTO303947 - ALIGN=15 - ALIGN=15 - ALIGN=10 - ALIGNGLOG -DEV TIMEOUT=120
-WARN TIMEOUT=30 -THREADS=1 -XGAPOP=10 -XGAPEXT=7
-YGAPOP=10 -YGAPEXT=7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Appl
Appl
Appl
Appl
Appl
Appl
                                                                                                                                                           (without alignments)
1909,103 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 75,
Sequence 74,
Sequence 88,
Sequence 91,
Sequence 82,
Sequence 85,
                                                                                                                                                                                                                                                                1 MSMSCGLCGANNCPRLMVSP.....YESRKAYAELRPRVNGRFVK 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Description
                                                                                                                                          February 23, 2006, 11:04:50; Search time 810 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Published Applications NA Main: *

l: /cgn2 6/ptodata1/fpubpna/USO7 PUBCOMB.seq: *

l: /cgn2 6/ptodata1/fpubpna/USO8 PUBCOMB.seq: *

l: /cgn2 6/ptodata1/fpubpna/USO8 PUBCOMB.seq: *

4: /cgn2 6/ptodata1/fpubpna/USO8 PUBCOMB.seq: *

5: /cgn2 6/ptodata1/fpubpna/US10A PUBCOMB.seq: *

6: /cgn2 6/ptodata1/pubpna/US10B PUBCOMB.seq: *

7: /cgn2 6/ptodata1/pubpna/US10B PUBCOMB.seq: *

7: /cgn2 6/ptodata1/pubpna/US10C PUBCOMB.seq: *

9: /cgn2 6/ptodata1/pubpna/US10E PUBCOMB.seq: *

9: /cgn2 6/ptodata1/pubpna/US10E PUBCOMB.seq: *

10: /cgn2 6/ptodata1/pubpna/US10E PUBCOMB.seq: *
                     GenCore version 5.1.7
Copyright (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                  nucleic search, using frame_plus_p2n model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-723-947-75 .

US-10-723-947-74

US-10-723-947-84

US-10-723-947-82

US-10-723-947-82

US-10-723-947-82
                                                                                                                                                                                                                                                                                                                                                                                                                                  9793542 seqs, 4134689005 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0%
Maximum.Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                7.0
                                                                                                                                                                                                                                                                                                                              Xgapop 10.0 , Xgapext
Ygapop 10.0 , Ygapext
Fgapop 6.0 , Fgapext
Delop 6.0 , Delext
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                     US-10-723-947-77
1048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     996
975
7051
639
639
639
                                                                                                                                                                                                                                                                                                           BLOSUM62
                                                                                                                                                                                                                                               Perfect score:
```

Database :

Score

٠ يو

Result

1035 907.5 816 768.5 730.5

40

20

267

80

9

327

387

447

567 180

```
507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IleSerAsnGluAlaIleMetThrIleAspThrGluMetMetValGlyProAlaHisTyr 140
                                                                                                                                                                                              228
                                                                                                                                                                                                                                                                                                                                                                                                                                              GlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHisLeu 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                101 ValGinProProAlaArgAlaHisIleValProPheTyrGlyGlyAlaPheThrAsnThr 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ProThrMetGlnGluArgAlaAlaLy8ValMetArgTyrArgGluLy8ArgLy8ArgArg 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 74, Application US/10723947

Publication No. US20040205848A1

GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Dubcovsky, Jorge
APPLICANT: Yan, Liuling
APPLICANT: Yan, Liuling
APPLICANT: Loukoianov, Artem
TITLE OF INVENTION: GENERAL RESPONSIBLE FOR VERNALIZATION
TITLE OF INVENTION: REGULATION IN TEMPERATE GRASSES AND USES THEREOF
TITLE OF INVENTION: REGULATION IN TEMPERATE GRASSES AND USES THEREOF
CURRENT FILING DATE: 2003-11-26
CURRENT FILING DATE: 2003-11-26
CURRENT FILING DATE: 2003-11-26
SEQ ID NOS: 159
SEQ ID NO 74
INDER OF SEQ ID NOS: 159
SEQ ID NO 74
INDER OF THE PROBLEM OF THE P
                                                                                                                                                                          268 CCAGCCAACTTCGACCATAGCAGAACATGGACCACACACCATTTCATGAAACAGCAGCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           448 ATTAGCAATGAAGCAATCATGACTATTGACACAGAGATGATGGTGGGGGCCTGCCCATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               508 CCCACAATGCAGGAGAGAGCAGCGAAGGTGATGAGGTATAGGGAAAAAGAGAAGAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    161 ArglyrAsplysGlnIleArgTyrGluSerArgLysAlaTyrAlaGluLeuArgProArg
                                                                                            109 ATGICCATGICATGCGGTTTTGTGCGGCGCCAACAACTGCCCGGGGCCTCATGGTCTCGCCC
                                                                                                                                                IleHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla
                                                                                                                                                                                                                                               41 HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
Matches:
Conservative:
Mismatches:
Indels:
  US-10-723-947-77 (1-187) x US-10-723-947-79 (1-975)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181 ValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  628 Grchacecrecrirerchae 648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA
CRGANISM: Triticum monococcum
US-10-723-947-74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1.26e-84
816.00
30.7%
30.6%
77.9%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 3
US-10-723-947-74
                                                                                                                                                21
                                                                                                                                                                                                                                                                                                                                                                                                                                              81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  141
                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score:
                                                                                     요
                                                                                                                                             ò
                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                               ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                 ò
                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                            109 ATGTCCATGTCATGCGGTTTGTGCGGCGCCAACAACTGCCCGCGCCTCATGGTCTCGCCC 168
                                                                                                                                                                          81 GlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHisLeu 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             349 GGGAACAGCAGCCTCACGTGGAGGTGGGCGCAGGCGCCAACACACATGGCTCACCTA 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ValGlnProProAlaArgAlaHisIleValProPheTyrGlyGlyAlaPheThrAsnThr 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121 IleSerAsnGluAlaIleMetThrIleAspThrGluMetWetValGlyProAlaHisTyr 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ProThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLysArgLysArgArg 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 161 ArgTyrAspLysGlnIleArgTyrGluSerArgLysAlaTyrAlaGluLeuArgProArg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  589 CGCTATGACAAGCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCATGG 648
                                                                                                                                                40
                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                               ProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAlaAla 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 79, Application US/10723947

Publication No. US20040205848A1

GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Pub.covsky. Jorge
APPLICANT: Toukcianov, Artem
TITLE OF INVENTION: GENES RESPONSIBLE FOR VERNALIZATION
TITLE OF INVENTION: REGULATION IN TEMPERATE GRASSES AND USES THEREOF
FILE REFERENCE: 514112000320
CURRENT FAPLICATION NUMBER: US/10/723,947
CURRENT FILING DATE: 2003-11-26
PRIOR APPLICATION NUMBER: US 10/412,137
PRIOR FILING DATE: 2003-64-11
NUMBER OF SEQ ID NOS: 159
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 79
LENGTH: 975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGCAGCGACCGGCAAGAGCCCACATCGTGCCATTTCACGGAGGTGCATTCACCAACACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 469 ATTAGCAATGAAGCAATCATGACTATTGACACAGAGATGATGATGGTGGGGCCTGCCCATTAT
                                                                                                                                             21 IleHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla
                                                                                                                                                                                                                                               HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   529 CCCACAATGCAGGAGAGAGCGGAAGGTGATGAGGTATAGGGAGAAGAGGAGAAGAGGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     975
168
3
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
US-10-723-947-77 (1-187) x US-10-723-947-75 (1-996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    649 Grcaaceccecrirercaae 669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; TYPE: DNA
; ORGANISM: Triticum dicoccoides
US-10-723-947-79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1.56e-96
907.50
91.4%
89.8%
86.6%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-723-947-79
                                                                                                                                                                                                                                               41
                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                 ò
                                                                                       g
                                                                                                                                           ò
                                                                                                                                                                                    g
                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d
```

	Db 4081 AAAACTGATCGAGATCGGGTCCAAAAAAGAACAAACCATACAAAATGGAAAGAAGATGC 4140	4141 TIGITTAGITIGCATCAGAAAATTGCCIAATTAGITACTTGCTATCAATCTTTGA	4201 ACATGGCATGTTCACCCCAAACGGACCCAGATCACAATTATTGATGAAGTTACGCCTTTT	109	Db 4321 ATTAAAAGTATATTTGTAGACCAATTGATTTTGGACGGTGCCCATCTTTGGAAAAAAA 4380	109	4381 TGCCAGAGGAGTTGTTAGCTTCCACTGTCCAGAAATAGAATAGTTACAATCAAGTGCATC	Oy 109	. 109	4501 GGGGAGTATCAAGTACGTA	110	4561	Oy 123 ASINGLATAILEMECTRITIEABDINICIUMECMECVALGISTY FLOAIGHISTY FETOLIII 142	143 MetGinGluargalaalalvsValMetArgTvrArgGluLvsArgLvsArgArgTvr	4681. ATGCAGGAGAGAGGAGGAGGTGATGAGGTATAGGGAGAAGGAGAAGA	163	4741	183	Db 4801 GGCCGCTTTGTCAAG 4815	RESULT 4 US-10-723-947-88	; Sequence 88, Application US/10723947 ; Publication No. US20040205848A1	; GENERAL INFORMATION: ; APPLICANT: Dubcovsky, Jorge	; APPLICANT: Yan, Liuling ; APPLICANT: Loukoianov, Artem minto of initemation, cambe beconside for unbilization	; TILLE OF INVENTION: CARGUATION IN TEMPERATE GRASSES AND USES THEREOF ; PITLE OF INVENTION: REGULATION IN TEMPERATE GRASSES AND USES THEREOF	CURRENT APPLICATION NUMBER: US/10/723,947	CORRENT FILTING DATE: 2003 11-20 ; PRIOR APPLICATION NUMBER: US 10/412,137 . Dato Pitting name: 2003-04-11	NUMBER OF SEQ 1D NOS: 159 SOFTWARE: FastSEO for Windows Version 4.0		, TYPE: DNA
US-10-723-947-77 (1-187) x US-10-723-947-74 (1-7051) Oy 1 MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro 20		21 IlehishishishishishisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla 40	41 HisGlyAsnHisHisHisHisHisGlySerAlaAlaAspTyrProValProPro 60	ProdapdanPheaspHisArgArgThrTrpThrArgProPheHisGluThrAlaa	GlyAsnSerArgLeuThrLeuGluValGlyAlaGlyGlnHisMetAlaH	GGGAACAGCAGGCTCACGCTGGAGGTGGGCGCAGGCGGCCAACACATGGCTCACCTA	101 ValGlnProProAlaArgAlaHisIle	109 109	3361 TTGCCGATGGATGCGTCCATGGCTTCCTCCTTAAAAATCCCCACCTAATTAAT	109 109	CICACAIAA	3481 TTCTGTTAATTTACGCTGCTCGATTGTTCTCCTGAAAAGATATACGGGAATGGATCTGG 3540	109 109	3541 ATATTCTTTAATTTTCTATGGAGCATAGAGTTTGTGTTTTGTATTAGTTGATGCAGAAT 3600	109 109	3601 TGTATGGGTTGTCAAATCATCAGTCATACATATACTTATTTCTTTTTTTT	109	3661 AAGAAGGTAATCAGTCATACATGCATACTGAAAATTAGACTTGTGTGCAATAACTAAC		3721 ACCAACTGGACGGCACAGGTGGGGGAAGACTTTAATCAAGCTGGTAGCTAAGT 3780	AATATAACATATCTCTTTATGGGATCAAGCAATACATATGCGCTCAATTCTCAACTTGTC		3841 AATAICTAICTGGAGGICCACACTTTAIGGTAATTAATTGACAAAGTTTTGTGAAAATGGAC 3900	109	3901 AATATACATACTGGATCGATGCACCCTTTTTTCTCATTTTATGTGGTCATTATAATTGATT 3960	109 109	3961 GTTATTTAGTATTTCAATTTTATCTTGAGCTAGTTTTGCAAGTCTGTAGCTCATATATAA 4020	109	4021 CTGATACTACTCCCCACGATAGCTTGCGTAGTGGCCGGGTGATCGATC

```
; ORGANISM: Hordeum vulgare
US-10-723-947-91
                                                                           Percent Similarity:
Best Local Similarity:
Query Match:
                                          Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-723-947-82
                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    178
                                                         Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 6
                                                                                                                                                                                      ò
                                                                                                                                                                                                               d
                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                        원
                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                      유
                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                235 CCAGAGAACAGCACCAGGCTCACAGGGAGGAGGAGGAGGCGAGGGGGCCAACAAGACAGGCTCAC 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100 LeuValGlnProProAla-----ArgAlaHisIleValProPheTyrGlyGlyAlaPhe 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    295 CTGCTGCAGCCACCGGCGCCAAGAGCCACCATGGTGCTTCTGCGAGAGTGCATTC 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          118 ThrAsnThrIleSerAsnGluAlaIleMetThrIleAspThrGluMetMetValGlyPro 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AlaHisTyrProThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLysArg 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               415 GCCTATAATCCAACGATGCAGGAGAGAGGCGAAGGTGATGAGGTACAGGGAGAAGAGG 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LysArgArgTyrAspLysGlnIleArgTyrGluSerArgLysAlaTyrAlaGluLeu 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       475 AAGAGGCGGCGCTATGACAAGCAAATCCGCTACGAGTCCAGAAAAGCTTACGCCGAGCTC 534
                                                                                                                                                                                                                                               40
                                                                                                                                                                                                                                                                                                         59
                                                                                                                                                                                       20
                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                 ProProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAla 79
                                                                                                                                                                                                                                                                                                                                                                                                                         80 AlaGlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlyGlnHisMetAlaHis 99
                                                                                                                                                                                                      MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro
                                                                                                                                                                                                                                              21 IleHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla
                                                                                                                                                                                                                                                                                                        41 HisGlyAsnHisHisHisHisHisGlySerAlaAlaAspTyr---ProValProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Dubcovsky, Jorge
APPLICANT: Yan, Liuling
APPLICANT: Yan, Liuling
APPLICANT: Yan, Liuling
APPLICANT: Loukoianov, Artem
TITLE OF INVENTION: GENES RESPONSIBLE FOR VERNALIZATION
TITLE OF INVENTION: REGULATION IN TEMPERATE GRASSES AND USES THEREOF
FILE REFERENCE: 514112000320
CURRENT APPLICATION NUMBER: US/10/723,947
CURRENT FILING DATE: 2003-11-26
PRIOR APPLICATION NUMBER: US 10/412,137
PRIOR FILING DATE: 2003-04-11
                                                      639
148
9 28
3
                                                      Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                         US-10-723-947-77 (1-187) x US-10-723-947-88 (1-639)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  178 ArgProArgValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               535 AGGCCACGGCTCAATGGCCGCTTTGCCAAG 564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQ ID NOS: 159
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 91
LENGTH: 642
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 91, Application US/10723947
Publication No. US20040205848A1
GENERAL INFORMATION:
                                                2.08e-80
768.50
82.6
77.9
; ORGANISM: Hordeum vulgare
US-10-723-947-88
                                                                                 Percent Similarity:
Best Local Similarity:
                                          Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 5
US-10-723-947-91
                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   138
                                                                                                              Query Match:
DB:
                                                         ..
So.:
                                                                                                                                                                                      ઠે
                                                                                                                                                                                                              g
                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                     а
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             а
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
```

```
120
                                                                                                                                                                                                                                                                                                                                        237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ThrasnThrileSerAsnGluAlaIleMetThrileAspThrGluMetWetValGlyPro 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LeuValGlnProProAla-----ArgAlaHislleValProPheTyrGlyGlyAlaPhe 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            537
                                                                                                                                                                                                                                                                40
                                                                                                                                                                                                                                                                                                                                                                                                                      79
                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AlaHisTyrProThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLysArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  80 AlaGlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        238 CCAGTGAATAGCACCAGGCTCACACAAGAGGTGGACGCAGGCGGCCAACAGATGGCTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   298 CTGCTGCAGCCACCGGCGCCCCCAAGAGCCACCATCGTGCCATTCCGCCGGAGTGCATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     418 GCCTATAGTCCAACGATGCAGGAAAGAGAAGAAGGTGATGAGGTACAGGGAGAAGAGG
                                                                                                                                                                                                         1 ATGICCATGCCATGCGGTTTGTGCGGCGCCACAATTGCCCGTATCACATGTCGCCC
                                                                                                                                                                                       21 IleHisHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla
                                                                                                                                                                                                                                                                                                                                                                                                                      ProProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                          178 ccicciosccaarireccaccaccaccaccaradesccacecrerircardaaacaccacr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAPPLICANT: Dubcoveky, Jorge
APPLICANT: Dubcoveky, Jorge
APPLICANT: Dubcoveky, Jorge
APPLICANT: Van, Liuling
TITLE OF INVENTION: GENER RESPONSIBLE FOR VERNALIZATION
TITLE OF INVENTION: REGULATION IN TEMPERATE GRASSES AND USES THER
FILE REFERENCE: 5141200320
CURRENT APPLICATION NUMBER: US,10/10/723,947
CURRENT FILING DATE: 2003-11-26
PRIOR PILLING DATE: 2003-04-11
NUMBER OF SEQ ID NOS: 159
SOFWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 92
LENGTH: 639
TYPE: DNA
                   6441
641
641
641
641
               Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                   US-10-723-947-77 (1-187) x US-10-723-947-91 (1-642)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ArgProArgValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      538 AGGCCACGGCTCAACGGCCGCTTTGTCAAG 567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; Sequence 82, Application US/10723947; Publication No. US20040205848A1; GENERAL INFORMATION:
6.21e-79
756.00
82.6%
76.8%
```

```
ORGANISM: Triticum dicoccoides
                                                          8.15e-76
729.50
81.6%
75.3%
69.6%
                                                                                    Percent Similarity:
Best Local Similarity:
Query Match:
                                            Alignment Scores:
Pred. No.:
                  US-10-723-947-85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 8
US-10-723-947-78
                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                   80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             138
                                                           . No. :
                                                                                                                                                                                            ð
                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                 임
                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     528
                                                                                                                                                                                                                                                                                                                                   229 GCAGGGAACAGCAGCAGACTCACGCTGGAGGTAGATGCAGGCGGCCAAAACATGGCTCAC 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         289 CTGCTGCAGCCACGGCAAGAACCACCATCGTGCCATTCTGCGGGGCTGCATTC 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ThrAsnThrIleSerAsnGluAlaIleMetThrIleAspThrGluMetMetValGlyPro 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     349 ACCAGCACTATTAGCAATGCAACAATCATGACTATTGATACAGAGATGATGGTGGGGGCT 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LysArgArgArgArgTyrAspLysGln1leArgTyrGluSerArgLysAlaTyrAlaGluLeu 177
                                                                                                                                                                                                                                                                                 61 GTT------CTTCAGCATCAGGAACAACACTGGCTGCGCGAGTACCAGTTCTTCACC 111
                                                                                                                                                                                                                                                                                                                                                                                                    169 CCGTCGGCCAATTGCCACCACTGCAGATCATGGACCACACCGTTTCATGAAACAGCAGCT 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LeuValGlnProProAlaArgAlaHis-----IleValProPheTyrGlyGlyAlaPhe 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AlaHisTyrProThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLysArg 157
                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                    21 IleHisHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla 40
                                                                                                                                                                                                                                                                                                                                                                        79
                                                                                                                                                                                                                                                                                                                                                                                                                                 AlaGlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlyHisMetAlaHis 99
                                                                                                                                                                                              20
                                                                                                                                                                                                                                                                                                              41 HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro 60
                                                                                                                                                                                         MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro
                                                                                                                                                                                                            1 ATGTCCATGTCATGCGGTTTGTGCGGCGCAAGCGACTGCCCGCACCACATGATCTCGCCC
                                                                                                                                                                                                                                                                                                                                                                        61 ProAsp---AsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 85. Application US/10723947
Publication No. US20040205848A1
GENERAL INFORMATION:
APPLICANT: Unbcoveky, Jorge
APPLICANT: Dubcoveky, Jorge
APPLICANT: Loukolanov, Artem
TITLE OF INVENTION: GENES RESPONSIBLE FOR VERNALIZATION
TITLE OF INVENTION: REGULATION IN TEMPERATE GRASSES AND USES THEREOF
FILE REFERENCE: 514112003120
CURRENT APPLICATION NUMBER: US/10/723,947
                                                          639
114
11
28
7
                                                                                     Conservative:
Mismatches:
Indels:
                                                                                                                                                              US-10-723-947-77 (1-187) x US-10-723-947-82 (1-639)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               178 ArgProArgValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            529 AGGCCACGGTCAATGGCTGCTTTGTCAAG 558
                                                          Length:
Matches:
                                                                                                                                  Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQ ID NOS: 159
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION NUMBER: US 10/412,137
PRIOR FILING DATE: 2003-04-11
; ORGANISM: Triticum monococcum, US-10-723-947-82
                                                          6.21e-76
730.50
81.6%
75.8%
                                                                                    Percent Similarity:
Best Local Similarity:
Query Match:
                                            Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 7
US-10-723-947-85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ ID NO 85
LENGTH: 639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         158
                                                                                                                                                                                                                                                                                                                                                                                                                                   80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    118
                                                           ..
..
                                                                           Score:
                                                                                                                                                                                         ò
                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                 요
                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .
B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            원
                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

```
168
                                                                                                                                                                                                                                                                                                                          111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ThrAsnThrIleSerAsnGluAlaIleMetThrIleAspThrGluMetMetValGlyPro 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AlaHisTyrProThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLysArg 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      158 LysargargargTyrasplysGlnIleargTyrGluSerargLysalaTyrAlaGluLeu 1.77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   528
                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                         79
                                                                                                                                                                                                                                                                                40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            66
                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INPORMATION:
APPLICANT: Dubcoveky, Jorge
APPLICANT: Yan, Lithling
APPLICANT: Yan, Lithling
APPLICANT: Yan, Lithling
APPLICANT: Yan, Lithling
TITLE OF INVENTION: GENES RESPONSIBLE FOR VERNALIZATION
TITLE OF INVENTION: REGULATION IN TEMPERATE GRASSES AND USES THEREOF
FILE REFERENCE: 514112000320
CURRENT FILING DATE: 2003-11-26
PRIOR FILING DATE: 2003-04-11
NUMBER OF SEQ ID NOS: 159
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 78
LENGTH: 2913
TYPE: DNA
                                                                                                                                                                                                                                                                                                             112 CAAGGC---CACCACCACCACCACCACGACGGGGGGGGGACTACCCACCGCCACGGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  289 CTGCTGCAGCCACGGCCAAGAACCACCATGTGCCATTCTGCGGGGCTGCATTC
                                                                                                                                                                                             21 IleHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla
                                                                                                                                                                                                                                                                                                                                                                     41 HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AlaGlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlnHisMetAlaHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LeuValGinProProAlaArgAlaHis-----IleValProPheTyrGlyGlyAlaPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                409 GCCCATAATCTGACGATGCAGGAGAGAGAGAGGAAGGTGATGAGGTACAGGGAGAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ProAsp --- AsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            349 ACCAGCACTATTAGCAATGCAACGATCATGACTATTGATACAGAGATGATGGTGGGGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              469 AAGAGGCGGTGCTATGACAAGCAAATCCGCTATGAGTCCAGAAAAGCTTACGCCGAGCTC
  639
143
12
28
7
Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                     US-10-723-947-77 (1-187) x US-10-723-947-85 (1-639)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             178 ArgProArgValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        558
                                                                                                           Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        529 AGGCCACGGTCAATGGCCGCTTTGTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 78, Application US/10723947 Publication No. US20040205848A1
```

109	Db 1457 TACATACTGGATCGATGCACCTTTTTCTCATTTTATGTGGTCATTATGAATTTGATTGT 1516	ογ 109 109	Db 1517 TATTTAGTATTTCAATTTTATCTTGAGCTAGTTTTGCAAGTCTGTAGCTCATATAAACT 1576	Οχ 109 109	Db 1577 GATACTACTCCCCACGATAGCTTGCGTAGTGGCCGGGTGATCGATC	Qy 109 109	Db 1637 AACTGATCGAGATCGGGTCCAAAAAAGAACAAAACCCATACAAAATGGAAAGAAGATCCTT 1696	109	1697 GTTTAGTTTGCATCAGAAAATTGCCTAATTAGTTACTTGCTATCAATTTGAAC	109	1/3/ AIGGCAIGITCACCCCAAACGGACICAGAITAITGITGAIGAAGIIACGCCIIIIAA	AAACTCATAAAACTGTACATACATGTACAGGGCTACACACATGTACATAAATACACCTAAT	ογ 109	Db 1877 TAAAACGTATATTCGTAGACCAATTGTTTGGACGGTGCACATCTTTGAAAAAAAA		1937 AGAGGAGTTGTTAGCTTCCACTGTCCAGAAATAGAATAG		7661	######################################	409 / AGIAICAAGIACGIAICIGCIACCCIAAGAAAGIACAIAGAAGATCIIAIIII 110		124 uAlaIleMetThrIleAspThrGluMetMetValGlyProAlaHisTyrProThrMetGl	 2177 AGCAAT	144	2237	Oy 164 sGln1leArgTyrGluSerArgLysAlaTyrAlaGluLeuArgProArgValAsnGlyAr 184	2297		2357 CTTTGTCAAG	6	US-10-723-947-87 : Semience 87. Application US/10723947	.~ <u>"</u>	; APPLICANT: Dubcovsky, Jorge ; APPLICANT: Yan, Liuling	
ORGANISM: Triticum dicoccoides -10-723-947-78	Alignment Scores:	: 5.32e-68 Length: 670.50 Matches:	ant Similarity: 28.3% Conservative: 3	cy: 2/.0% mismaccines f4.0% Indels:	s caps:	-/23-54/-// (I-I8/) X US-IO-/23-54/-/8 (I-25I3)	1 MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro 20 	IleHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePhala	ATTCATCATCGTCATCACCATCATCAGGAGCACCAGCTGCGTCAGCACCACATCTTCGCC	41 HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProPropro 60	698 CAAGGCAACCACCACCACCACCACCACCACTGCCG 736	1 ProdspanPhedsphisArgArgThrTrpThrArgProPheHisGluThrAlaAlaAla 80		GGGAACAGCAGCACACACACACACACACACACACACACA	ValGlnProProAlaArgAlaHisIle10		109	917 TTGCCGATGGATGCGTCCCTGGCTTCCTCTTAAAAATCCCCCACCTAATTTATGTCCATC 976	109 109	977 TATACCCACTACAAAAAATAGCACCATGTAACCATCTCATATATCTGTCACATAATTCT 1036	109	1037 GTTAATGTACGCTGCTCAATTGTTCTCCTGAAAAAATATGCGGGAATGGATCTTGATAT 1096		1097 TCTTTAATTTTCTATGGAGGCATATATAGAGTTTGTGTTTTGTATTAGTTGATGCAGAAT 1156		7 TGTATGGGTTGTCAAATCATCAGTCATACATATAAACTTATTTCATTTTATTTGACCAAC	. !	1217 AACAAGGTAATCAGTCATACATGCATACTGAAAATTTGACTTGTGTTCAATAACTAAC	109 109	1277 ACTCGACCGGCACAGGCGGAAGACTTTAATCAAGCTGCTAGCTA	109 109	1337 TAACATATCTCTTTATGGGATCAAGCAATACATATGCGCTCAATTCTCAACTTGTCAATA 1396	109 109	1397 TCTATCTGGAGTCCACACTTTATGGTAATTAATTGACAAAGTTTTGTGAAATGGACAATA 1456

```
.050 ACTCTCATTTTATGTGGTCATTTATGAATTTTATTAATTTTCTGTTGAGCTAGTTTTGTA 1109
                                                                                                                                                 1170 ATCGATCTACCTAGTTCATAAACTTATCGAGATCAGGTCCAAAACAGACCAAAACCTCAC 1229
                                                                                                                                                                                                                  1230 GAAATGGAAACAAGATCCTTGTTTAATTAGTTTGCATCAGGAAATTGCTTATTACTTGCT 1289
                                                                                                                                                                                                                                                                                     1290 GTCAATCTTATGAAGATGGTATTTTCCTCACAAATGGATCCAGTCACAATTGTTGATGAA 1349
                                                                                                                                                                                                                                                                                                                                                        1350 GTTAAACATTTTTGGCAATTCATAAAACCGTGCATAGATGTCCGGCTACACGCACACAAG 1409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1530 TACAGTCAAGTGCAACACTGAATGAAAATGGATCAAGTTTTGGTTAACAAGAGACCAACT 1589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1590 TATACTTCATAAACAAGGAATATCAAGTACATATCTGCTACCCACAAGAAAAGTACACT 1649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1830 CGCTATGACAAGCAAATCCGCTACGAGTCCAGAAAAGCTTACGCCGAGCTCAGGCCACGG
                                                                                1110 TGCTTATAGCTCATATATAAACTGATACTTCCCCATAATTTTTCCGTAGTGGTCGGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                         1410 TACATAATACACCTAGTTAAAACATATATCCATAGAGCAATTGAGTTTGGACTATGCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .470 TCATTGGACACAAAGGCCCGGGAAGTTGTTCTCTTCCATTGTCTAAAAAAATAGAACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IleSerAsnGluAlaIleMetThrIleAspThrGluMetMetValGlyProAlaHisTyr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ArgTyrAspLysGlnIleArgTyrGluSerArgLysAlaTyrAlaGluLeuArgProArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -----ValPropheTyrGlyGlyAlaPheThrAsnThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ProThrMetGlnGluArgAlaAlaAlaLysValMetArgTyrArgGluLysArgLysArgArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SLE FOR VERNALIZATION
TEMPERATE GRASSES AND USES THEREOF
                                                                                                                                                                                                                                                                                                                       -ArgAlaHisIle--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Dubcovsky, Jorge
APPLICANT: Dubcovsky, Jorge
APPLICANT: Yan, Liuling
ITILE OF INVENTION: GENES RESPONSIBLE FOR VI
TITLE OF INVENTION: REGULATION IN TEMPERATE
FILE REFERENCE: 514112000320
CURRENT APPLICATION NUMBER: US/10/723,947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT FILING DATE: 2003-11-26
PRIOR APPLICATION NUMBER: US 10/412,137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 90, Application US/10723947 Publication No. US20040205848A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-723-947-90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1890
                                                 105
                                                                                                                  105
                                                                                                                                                                                                                                                                                                                                                                                                                                                            109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .191
                                                                                                                                                                                   105
                                                                                                                                                                                                                                                      105
                                                                                                                                                                                                                                                                                                                       106
                                                                                                                                                                                                                                                                                                                                                                                         109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   141
                                                                                                                                                                                                                                                                                                                                                                             '۵
                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                              셤
                                               ò
                                                                           g
                                                                                                                  à
                                                                                                                                          쉽
                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         803
                                                                                                                                                                                                                                                                                                                                                                                                                                         395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GITCITCITCATCACCATCACCAGGAACACCCACTGCACGAGTACCAGTTCTTCGCC 455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGGCCAGACAATTGCCACCACCACAGATCATGGACCACGCCGTTTCATGAAAACAGCAGGT 569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      810 TATTCTGGTCGATTGTAATTTACCAAGGCAGAAAGCTTGTATTTTGTATCAGTTGATGCA 869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTAACAAGGTAACTAGTTAATTCCTTTATGGGGTCAAGCAATACATATGTGCACGCCTTC 989
                                                                                                                                                                                                                                                                                                                                                                                                           20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               66
                                                                                                                                                                                                                                                                                                                                                                                                         MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro
                                                                                                                                                                                                                                                                                                                                                                                                                              336 ATGTCCATGTCATGTGGTTTTGTGCGGCGCCCACCACTGCCGCGCTACCACATGATGTGCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyr---ProValProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AlaGlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGTTAATTCCTTGACAAGTTTGTGAAGTGGAAAATATATTTACTTTATCAATGCACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21 IleHisHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ProProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    690 TICTATCICTIGCGGATGGGACCIGCTAACAAAATCACACTITCTTAATITCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         750 CTCAAAAAAGCTACCGCCATGTGACCAGCTCATATATATGCCACATAACTCCTTTAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAGAATGGGCGCTCACGTCATCAGTCGCACATACTATATATTTTCATTTTATTTTGA
REGULATION IN TEMPERATE GRASSES AND USES THEREOF
                                                                                                                                                                                                                                                  1985
147
9
29
342
4
                                                                                                                                                                                                                                                  Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                        US-10-723-947-77 (1-187) x US-10-723-947-87 (1-1985)
                                   PRIOR APPLICATION NUMBER: 2003-11-26
PRIOR APPLICATION NUMBER: US 10/412,137
PRIOR FILING DATE: 2003-04-11
NUMBER OF SEQ ID NOS: 159
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 87
            FILE REFERENCE: 514112000320
CURRENT APPLICATION NUMBER: US/10/723,947
CURRENT FILING DATE: 2003-11-26
                                                                                                                                                                                                                                                                                                                                          Gaps:
                                                                                                                                                                                                                                                    9.68e-59
590.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LeuValGlnProProAla
                                                                                                                                                                                                                                                                                     29.6%
27.9%
56.3%
                                                                                                                                                                               ; ORGANISM: Hordeum vulgare
US-10-723-947-87
                                                                                                                                                                                                                                                                                Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                 LENGTH: 1985
                                                                                                                                                                                                                                    Alignment Scores
                                                                                                                                                                 TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                105
                                                                                                                                                                                                                                                    .. oN
```

1529

109

109

109

ò В 8 B

ò d

8

g

8

a ò a δ q ò g ò g ò

ò

d à ď

g ò

1889

180

160

140

1376

106

1436

1496

108

106

```
.257 INNINNINNINGAGITCATGAAACIGATCAGATCAGINCAAANAGGCCAAACCICNCGA 1316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1497 ACACGCACATAATACGCCTAGTTAAAACATATATGCATAGAGCAATTGAGTTTGGACAAT 1556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     077 TTAATTCCTTGGCAGAGTTTGTGAAATANAAGATATATATATTGGGATCAATGCACCCTACC 1136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             pThrGluMetMetValGlyProAlaHisTyrProThrMetGlnGluArgAlaAlaLysVa 150
                                                                                                                                                                 1137 TCTTTCTCATTTTATGTGGNCATTTAAAAATTTGAATGCTATTTTGTATTTAANTTTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                            1317 AATGGAATTNCGATCCTTGTTAANTAGTTTGCATCAGGAAATNGGCTACTTAATTACTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1377 CTACCAATNTTATGAAGATGGCATGTTTCCTCACAAATGGATCCAGCTCACAATTTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1437 TGAAGTTAAACATTTTAGCAATTCATAAAAGGTGCATAGATGTACAGGGCTACACGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1557 GCGCTTCTTTGGACATAATGGCCCGGGAAATTGTTCTCTTCCATTGTCTAAAAACATAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             lProPheTyrGlyGlyAlaPheThrAsnThrIleSerAsnGluAlaIleMetThrIleAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1857 GATGAGGTACAGGGAGAAGAAGAAGAAGCGGCGCTATGACAAGCAAATCCGCTACGAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1677 CAACTATACGTTATAAACACTGTACTACTCCTCACCATTGTTTTCCTCTCGATGTTCAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           150 lMetArgTyrArgGluLysArgLysArgArgArgTyrAspLysGln1leArgTyrGluSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 81, Application US/10723947
Publication No. US20040205848A1
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Yan, Liuling
APPLICANT: Yan, Liuling
APPLICANT: Loukcianov, Artem
TITLE OF INVENTION: GENES RESPONSIBLE FOR VERNALIZATION
TITLE OF INVENTION: REGULATION IN TEMPERATE GRASSES AND USES THEREOF FILE REPERRENCE: 51112001320
CURRENT APPLICATION NUMBER: US/10/723,947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1917 cagaaaagcriracgccgagcriraggccacgggrcaacggccgcrirgrcaag 1968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rArgLysAlaTyrAlaGluLeuArgProArgValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----AlaHis------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 11
US-10-723-947-81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           170
                           106
                                                                                                                      106
                                                                                                                                                                                                                    106
                                                                                                                                                                                                                                                                                                                 106
                                                                                                                                                                                                                                                                                                                                                                                                               106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     109
                                                                    유
                                                                                                          ò
                                                                                                                                                                 g
                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 957 AAGACTGGATGCTCAGATCATCAGTCACACATACTATATTTTATTTTATTTTATTTGAC 1016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1017 TAACAAGGTAATCAGTTAATTCCTTTATGGGGTCAAGCAACATATGTCCACGCCTTCATG 1076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               940 CAAGGT---CACCACCACCACCACCACGGGGGGGCAGACTACCCACGGCACAGGCA 596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    837 TCAAAAAAGCTAGCGCCATGTGACCAGCTCATATATCTGTCACATAACTCCGTTAATTT 896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    897 ATGCTGGTCGATTGTAATTTACCAAGGCAGAAAGTTTGTGTTTTGTATCAGTTGATGCAC 956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           80 AlaGlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHis 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9, 1250, 1251,
1260, 1261,
1340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAGTGAATAGCACCAGGCTCACACAAGAGGTGGACGCAGGCGGCCAACAGATGGCTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      777 CATCTTCCCGATCGATGTGACTCCTTCTAACAAAATCACACTTTCTTAATTTCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ProProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21 IleHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValPro---Pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2043
146
11
29
332
4
                                                                                                                                                                                                                                                                 1257, 1258,
1300, 1313,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-723-947-77 (1-187) x US-10-723-947-90 (1-2043)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ength:
PRIOR FILING DATE: 2003-04-11
NUMBER OF SEQ ID NOS: 159
SOFTWARE: PSECSEQ for Windows Version 4.0
SEQ ID NO 90
LENGTH: 2043
                                                                                                                                                                                                               LOCATION: 1105, 1156, 1190, 1197, 1209, 10CATION: 1242, 1243, 1244, 1245, 1246, 1264, 1267, 1266, 1267, 1267, 1266, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267, 1267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LeuValGlnProProAla-Arg---
                                                                                                                                                                                                                                                                                                                                                                                                     ) OTHER INFORMATION: n = A,T,C or G
US-10-723-947-90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1.16e-56
572.50
30.3%
28.2%
54.6%
                                                                                                                      TYPE: DNA
ORGANISM: Hordeum vulgare
                                                                                                                                                                                                                                                                                                                                        FEATURE:
NAME/KEY: misc_feature
LOCATION: 1359, 1385
                                                                                                                                                                                                NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ∙8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
```

1736

110

130

1616

1796

1856

1916

σ

```
3476
                                                                                                                                                                         3536
                                                                                                                                                                                                                                                                                                                                                                   3716
                                                                                                                                                                                                                                                                                                                                                                                                                                   3776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4196
                                           3357 GTGGTCATTTATGAATTTTAGTGCTATTTTATATTTAAATTTTCTCTTAAGCTTGTTTTG 3416
                                                                                                                                                                                                                                       3537 TCACGAAATAGAAACAAGATCCTTGTTTAATAAGTTTGCACCAGGAAATTGCCTACTTAA 3596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3777 TTGGACTGTGCGCTTCTTTGGACACAAAGGCCCGGGAAGTTGTTCTCTTCCATTGTCTAG 3836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3957 AAAAGTACAGAGCTGCACTCTTACAGTTATTTTCCTCTTCATGTTCAGGTGCCATTCTGC 4016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           133
                                                                                                                                                                                                       109
                                                                                                                                                                                                                                                                        109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ArgGluLysArgLysArgArgArgTyrAspLysGlnIleArgTyrGluSerArgLysAla
                                                                                                         3417 TAAGCTTATAGCTCATGTATAACAGATACTACTCCCCATAATTGCTTCCGTAGTGGCCGG
                                                                                                                                                                       3477 GTGATCAATCTACCGAGTTCATAAACTGATCGGGATCAGATCCAAAACCGAAAACC
                                                                                                                                                                                                                                                                                                       TTACTTTCTATCAATCTTATGAACATGGCATGTTTCTCACACATATGGTGACCCAGATCACA
                                                                                                                                                                                                                                                                                                                                                                     1657 ATTGTTGACGGAGTTAAACATTTTTAGCAATTCATAAAACCATGCACAGGTGTACAGGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                   3717 TACGCGTATGCACATACATAATACACCTAATTAAAACATATATTCATAGAGCGATTGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3897 TAAGAGACCAACTGTACTTCATAAACAGGGAATATCATGTACATATCTGCAACCCACAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .----ValProPheTyr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GlyGlyAlaPheThrAsnThrIleSerAsnGluAlaIleMetThrIleAspThrGluMet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MetValGlyProAlaHisTyrProThrMetGlnGluArgAlaAlaLysValMetArgTyr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGGAGAGAGGAGGAGGCGGTGCTATGACAAGCAAATCCGCTACGAGTCCAGAAAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 84, Application US/10723947
Sequence 84, Application US/10723947
CENERAL INFORMATION:
CENERAL INFORMATION:
CENERAL INFORMATION:
CENERAL INTORMATION:
CENERAL INDICONE;
APPLICANT:
LOUKOISHOW, Artem
TITLE OF INVENTION:
CENERAL SERSPONSIBLE FOR VERNALIZATION
TITLE OF INVENTION:
CURRENT APPLICATION WIMBER:
CURRENT APPLICATION WIMBER:
CURRENT FILING DATE:
2003-11-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TACGCCGAGCTCAGGCCACGGTCAATGGCTGCTTTGTCAAG 4238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TyralaGluLeuArgProArgValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 12
US-10-723-947-84
                                                                                                                                                                                                                                                                                                       3597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4137
                                                                                                                                                                                                                                                                                                                                     109
                                                                                                                                                                                                                                                                                                                                                                                                     109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          174
               109
                                                                             109
                                                                                                                                         109
                                                                                                                                                                                                       109
                                                                                                                                                                                                                                                                        109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4197
                                      셤
                                                                           ઠ
                                                                                                  셤
                                                                                                                                         ठ
                                                                                                                                                                 음
                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                a
a
                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                            원
                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                            원 상 원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2996
                                                                                                                                                                                                                                                                                                                                                                        2589 AIGTCCAIGTCAIGCGGTITGTGCGGCGCAAGCGACTGCCCGCACCACATGAICTCGCCC 2648
                                                                                                                                                                                                                                                                                                                                                                                                                                      3057 TAGCGCCATGTAACCAGCTCATATCTGTCACATAATTCTGTTAATTTATGCTGGTCAA 3116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3117 TTATAATCTCCCAAGGCAGAAAGTTTGTGTTTGTATCAGTTGATGAACAAGAATGGGAA 3176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3177 CTCACATCATCAGTTACACATACATACTTATTTCATTTTATTTGACTAACAAGGTAATCA 3236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3297 CAAAGTTTGTGAAATGGACAATATATATACTGGATCAATGCACCCTCTTTCTCATTTTAT 3356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            66
                                                                                                                                                                                                                                                                                                                                                                                                                21 IleHisHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           80 AlaGlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHis
                                                                                                                                                                                                                                                                                                                                                      MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ProAsp---AsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2757 CCGTCGGCCAATTGCCACCACCACTGCAGATCATGGACCACCACTTTCATGAAACAGCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAGGGAACAGCAGCAGACTCACGCTGGAGGTAGATGCAGGCGGCCAAAACATGGCTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  41 HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaASpTyrProValProProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2937 ITCCAGCTCTTGCCGATCGCTGGGGCCTCCTTGTAACAAAGTTCCCTTTTACGTAATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTTAATTCCTTTATGGGAACAAGCAATACATATGTCCACGCCTTCATGTTAATTCCTTGA
                                                                                                                                                                                                       5734
145
11
27
371
5
                                                                                                                                                                                                     Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                    US-10-723-947-77 (1-187) x US-10-723-947-81 (1-5734)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LeuValGlnProProAlaArg-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ---AlaHisIle
PRIOR APPLICATION NUMBER: US 10/412,137
PRIOR FILING DATE: 2003-01-11
NUMBER OF SEQ ID NOS: 159
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 81
LENGTH: 5734
                                                                                                                       TYPE: DNA; ORGANISM: Triticum monococcum
US-10-723-947-81
                                                                                                                                                                                                    3.95e-53
547.50
28.2%
26.2%
52.2%
                                                                                                                                                                                                                 rercent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                      Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     109
```

ò g ò g ď à a ò a ò 임 õ ď ò Q

ò

8 '&

ò g g

ò

8

ద

원

Mon Feb

ò g ઠે d ò g

```
APPLICANT: La Rosa, Thomas J.
APPLICANT: La Rosa, Thomas J.
APPLICANT: Kovalic, David K.
APPLICANT: Zhou, Yihua
APPLICANT: Cao, Yongwei
APPLICANT: Wu, Wei
APPLICANT: Buckharov, Andrey A.
APPLICANT: Barbazuk, Brad
APPLICANT: Li, Ping
TITLE OF INVENTION: Rice Nucleic Acid Molecules and Other Molecules Associated With
                                                                                 2130
                                                                                                                                                2190
                                                                                                                                                                                                             2250
                                                                                                                                                                                                                                                                         2310
                                                                                                                                                                                                                                                                                                                                                                                                       2430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2850
                   2011 ITTTAGTGCTATTTTGTATTTAAAATTTTCTCTTAAGCTTGTTTTGTAAGCTTATAGCTC 2070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2491 TACAATCAAGTGCACCACTGAATGAAAATGGGTCAATTCTGGTTAATAAGAGACCAACTG 2550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               118
                                                                                                                                                                               109
                                                                                                                                                                                                                                                                                                          109
                                                                                                                                                                                                                                                                                                                                                                       109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3371 TACATAATACACCTAATTAAAACATATATTCATAGAGCGATTGAGTTTGGACTGTGCGCT
                                                                                 2071 AAGTATAACAGATACTACTCCCCATAATTGCTTCCGTAGTGGCCGGGTGATCAATCTACC
                                                                                                                                                3131 GAGTTCATAAAACTGATCGAAATCAGATCCAAAACAGACCAAAACCTCACGAAATAGAAA
                                                                                                                                                                                                            CAAGATCCTTGTTTAATTAGTTTGCACCAGGAAATTGCCTACTTAATTACTTTCTATCAA
                                                                                                                                                                                                                                                                           1251 TCTTATGAAGATGGTATGTTTCTCACATATGGTGATCCAGATCACAATTGTTGACGGAGT
                                                                                                                                                                                                                                                                                                                                          2311 TAAACATTTTTAGCAATTCATAAAACCGTGCACAGATGTACAGGGCTACGCGTATGCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2551 TACTTCATAAACAGGGAATATCATGTACATATCTGCAACCCCACAGGAAAAGTACAGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .........ValProPheTyrGlyGlyAlaPheTh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCACTCTTACGATTATTTTCCTCTTCATGTTCAGGTGCCATTCTGCGGGGCTGCATTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rAsnThrIleSerAsnGluAlaIleMetThrIleAspThrGluMetMetValGlyProAl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                aHisTyrProThrMetGlnGluArgAlaAlaiysValMetArgTyrArgGluLysArgLy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCATAATCTGACGATGCAGGAGAGAGAGGCGAAGGTGATGAGGTACAGGGAGAAGAGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     THE SCACGGGCCAATGGCCGCTTTGTCAAG 2878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gProArgValAsnGlyArgPheValLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 83163, Application US/10437963 Publication No. US20040123343A1 GENERAL INFORMATION:
                                                     109 -----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 13
US-10-437-963-83163
                                                                                                                                                                                                             2191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2851
                                                                                                                                                                                                                                                                                                          109
                                                                                                                                                                                                                                                                                                                                                                         109
                                                                                                                                                                                                                                                                                                                                                                                                                                        109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       178
                                                                                                                109
                                                                                                                                                                               109
                                                                                                                                                                                                                                             109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                110
                                                                                                                                                                                                     g
                                                                          셤
                                                                                                               ò
                                                                                                                                           g
                                                                                                                                                                              ò
                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                          1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1470
                                                                                                                                                                                                                                                                                                                                                                                                            1591 TTCCAGCTCTTGCCGATCGCTTGGGCCTCCTTCTAACAAAGTTCCCTTTTACGTAATCT 1650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1651 CCATCTACTCCCCCCCCCCCCCCCCCCGGCATCTCAAAAAGTTAGCGCCATGTAACC 1710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1711 AGCTCATATATCTGTCACGTAATTCTGTTAATTTATGCTGGTTGAATATAATCTCCCAAG 1770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1771 GCAGAGTGTTTGTGTTTTGTATCAGTTGATGCACAAGAATGGGCACTCACATCATCAGTT 1830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1831 ACACATACATACTTATTTCATTTTTATTTGACTAACGAAGGTAATCAGTTAATTCCTTTATG 1890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAACAAGCAATACATATGTCCACGCCTTCATGTTAATTCCTTGACAAAGTTTGTGAAAT 1950
                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   66
                                                                                                                                                                                                                                                                                                                                                                                        21 IleHi8Hi8Hi8Hi8Hi8Hi8Hi8GlnGluHi8GlnLeuCysGluTyrGlnPhePheAla 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1243 ATGCCCATGTCATGCGGTTTGTGCGGCGCAAGCGACTGCCCGCACCACATGATCTCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ProAsp---AsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AlaGlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHis
                                                                                                                                                                                                                                                                                                                       MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1951 GGACAATATATATACTGGATCAGTGCACCATCTTTTTCATTTTATGTGGTCATTTTATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                       41 HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro
                                                                                                                                                                               3454
145
12
26
367
5
                                                                                                                                                                            Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                         US-10-723-947-77 (1-187) x US-10-723-947-84 (1-3454)
PRIOR APPLICATION NUMBER: US 10/412,137
PRIOR FILING DATE: 2003-04-11
NUMBER OF SEQ ID NOS: 159
SOFWARE: FASISEQ for Windows Version 4.0
SEQ ID NO 84
                                                                                                                                                                                                                                                          Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LeuValGlnProProAlaArg
                                                                                              TYPE: DNA ORGANISM: Triticum dicoccoides
                                                                                                                                                                            2.66e-52
538.00
28.5%
26.4%
51.3%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -AlaHisIle-
                                                                                                                                                                                                        Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                Alignment Scores:
                                                                                 LENGTH: 3454
                                                                                                                    ; ORGANISM: Tr
US-10-723-947-84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    109
                                                                                                                                                                              Pred. No.:
```

g ò g ò g ò В ò Q ઠે g ò g ò g ò g ò g ò

ò

```
326 cáccaccaccaccacaccas de as a se consecuenca de consecuenca de consecuencia de consecuencia de consecuencia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TyrargGlulysargLysargArgArgTyraspLysGlnIleArgTyrGluSerargLys 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            506 AACGGGGTTGTGCCCGAGGGCGGAGGGGCGCCCCCTCTTCGACGGGTACGCGCAC 565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   734 TGCGGGAGCACGTTCACCGACGCGGCGGCCAACGGCAAGCGCAAGCGGCGCCGACCCGGAG 793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MetMetValGlyProAlaHisTyrProThrMetGlnGluArgAlaAlaLysValMetArg 152
                                                                                                          APPLICANT: La Rosa, Thomas J.
APPLICANT: La Rosa, Thomas J.
APPLICANT: Kovalic, David K.
APPLICANT: Zhou, Yihua
APPLICANT: Zhou, Yihua
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated V
TITLE OF INVENTION: Plants
FILE REFERENCE: 38-21(5322)B
CURRENT APPLICATION NUMBER: US/10/425,115
CURRENT APPLICATION NUMBER: 2003-04-28
NUMBER OF SEQ ID NOS: 369326
SEQ ID NOS: 369326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .----ThrAlaAla 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -------SerAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     446 reserrencaacecececececéàcerecácecéérecesecececececeséces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GlyGlyGlnHisMetAlaHisLeuValGlnProProAlaArgAlaHisIleValProPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----acgacgrccagcgccacaarcargrccrrc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                113 TyrGlyGlyAlaPheThrAsnThrIleSerAsnGluAlaIleMetThrIleAspThrGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          566 GCTCAGTACGCCCAGCCTCCACGGCCTCATGTTCGACGTGCCGCTGAGCCGGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     626 gecédicanceandecegesegrecricadadecageserregeserragesescentes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -- ProProProAspAsnPheAspHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ------LeuCysGluTyrGlnPhePheAlaHisGlyAsnHisHis
     742 TATGCCGAGATGAGGCCCCGAGTGAGAGGTCGCTTCGCCAAA 783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       901
67
21
55
64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     80 AlaGlyAsnSerSerArgLeuThrLeuGlu------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-723-947-77 (1-187) x US-10-425-115-34955 (1-901)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HisHisHisHisHisHisHisGlnGluHisGln----
                                                                                                                                                                                                                                                                                                                                                                                                    Clone ID: MRT4577_131881C.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67 ArgArgThrTrpThrArgProPheHisGlu-
                                                                       Sequence 34955, Application US/10425115
Publication No. US20040214272A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              686 geceacageaarceage----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1.26e-17
237.00
42.5%
32.4%
22.6%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       794 GTG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            54 AspTyrProvalPro-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                    ; OTHER INFORMATION:
US-10-425-115-34955
                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA
ORGANISM: Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22
                                                                                                                                                                                                                                                                                                                                                                                      FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ..
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        상· 점
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241 GTGCACGAGTTCCAGTTCTTC-----GGCAACGACGCGGCGGCGACGACGAGGAGC 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGAGGAACACCGGCGCCGCCGGCGG------CTCACGTTCGACGTCCCCTCGGC 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HisLeuValGlnProProAlaArgAlaHisIleValProPheTyrGlyGlyAlaPheThr 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            119 AsnThrileSerAsn------GluAlaIleMetThrileAspThrGluMet 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       154 ArgGluLysArgLysArgArgArgTyrAspLysGlnIleArgTyrGluSerArgLysAla 1,73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CATCATCGCCAGCCG-----CCGTACGACGCGTCGTGGCGCCCCCCCGTCGTTC 405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98
                                                                                                                                                                                                                                                                                                                                                                                                                        ----SerCysGlyLeuCysGlyAlaAsnAsn----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ---CysProArgLeuMetValSerProlleHisHisHisHisHisHisHisGlnGluHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181 GGATTCCCCTTCGTCTTCCCGCCGAGTGCGTGCCAGGGGATCGGCGCCCCGGCGCCCACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -----GluTyrGlnPhePheAlaHisGlyAsnHisHisHisHisHisGlySerAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MetValGlyProAlaHisTyrProThrMetGlnGluArgAlaAlaLysValMetArgTyr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ------GlyAlaGlyGlyGlnHisMetAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GACGCAGCGÁGCTCGATGCCCAAGGAGATGGTGGCCGCCÁTGGCCGATGATGGGGÁGAGC
       for Plant Improvement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ---HisGluThrAlaAlaAlaGlyAsnSerSerArgLeuThrLeuGluVal---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TyralagluLeuArgProArgValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                         864
84
119
61
90
14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       65 AspHisArgArgThrTrpThrArgProPhe------
                                                                                                                                                                                                                                                                                                                                                                                   US-10-723-947-77. (1-187) x US-10-437-963-83163 (1-864)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----AspTyrProValProProPro-
                                                                                                                                                                                                                                                       Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                  , OTHER INFORMATION: Clone ID: PAT_MRT4530_82521C.1
US-10-437-963-83163
TITLE OF INVENTION: Plants and Uses Thereof FILE REFERENCE: 38-21(53221)B
CURRENT APPLICATION NUMBER: US/10/437,963
CURRENT FILING DATE: 2003-05-14
NUMBER OF SEQ ID NOS: 204966
SEQ ID NO 83163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   --GlnLeuCys
                                                                                                                                                                                                                                                   4.01e-20
258.00
40.6%
33.1%
24.6%
                                                                                                                               TYPE: DNA
ORGANISM: Oryza sativa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ala-----
                                                                                                                                                                                                                                                                                                                                                                                                                        MetSerMet.
                                                                                                                                                                                                                                                                                                           Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                            Percent Similarity:
                                                                                                                                                                                                                                          Alignment Scores:
                                                                                                            LENGIH: 864
                                                                                                                                                                                                                                                                                                                                                                                                                                                            91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  174
                                                                                                                                                                   FEATURE:
                                                                                                                                                                                                                                                             Pred. No.:
```

g

ò 셤 a

ò 요 ò

ò

ò

445

53

505

99

셤

원 ò 엽 ò g

ò

a

ઠે 유

ò

ä

ò

ò 셤

685 112

8

733 132

```
134 MetValGlyProAlaHisTyrProThrMetGlnGluArgAlaAlaLysValMetArgTyr 153
                                                                                                           154 ArgGluLysArgLysArgArgArgTyrAspLysGlnIleArgTyrGluSerArgLysAla 173
                                                                                                                                             730 AAGGAGAAGAGGGAAGCGGATACGAGAAGCAGATCCGGTACGCCTCGCGCAAGGC 789
   613 GCCGTGAGCTCCATCCCGAAAGATCACGCGGCGGCGGCGGCGGTCGTTGCCAACGGCGGC
                                                            174 TyralaGluLeuArgProArgValAsnGlyArgPheValLys 187
                                                                                                                                                                                                     790 TACGCCGAGATGCGGCGCGCGGTGAAGGCCCGCTTCGCCAAG 831
                                                                                                                                                                                                                                                                       Search completed: February 23, 2006, 13:11:31
Job time : 820 secs
   유
                                       ઠે
                                                                       g
                                                                                                         ò
                                                                                                                                           g
                                                                                                                                                                                 ò
                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: Rice Nucleic Acid Molecules and Other Molecules Associated With TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement FILE REFERENCE: 38-21(5321)B CURRENT APPLICATION NUMBER: US/10/437,963 CURRENT FILING DATE: 2003-05-14 NUMBER OF SEQ ID NOS: 204966 SEQ ID NO 82314 LENGTH: 1413
 TACAAGGAGAAGCGGAAGGGGGCGCTACGAGAAGCAGATTCGCTACGCCTCCCGCAAG 880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         274 TGGCTCTTCAACGACCCGGCGCCGCCGGGGGGGGCCACCAGCTTCACCGCCAAACC 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ::: |||
514 AACCCGGCGACGTCGAGCAGCACTTTTCAAGTATTCAACGGTGTGTCAACTGTCAAC 573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -- Argrecificigradga Garacificacidae 612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        334 GCGCCCATGGCGGTCGGCAACGGCGCGCGCGCGCCAGCAGCGGCAGGCGTTCGACGCG 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           394 TACGCGCAGTACCAGCCCGGGCCACGGCTCCACGTTCGACGTGCCGCTCACCCGAGGCGAG 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 genegenegengenneangenneangennegennegengenegengenegengengen 513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100 LeuValGInProProAlaArgAlaHisIleValProPheTyrGlyGlyAlaPheThrAsn 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -GlualalleMetThrIleAspThrGluMet 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LeuCysGluTyrGlnPhePheAlaHisGlyAsnHisHisHisHisHisGlySerAla 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ---HisArgArgThr 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         --GlyAsn 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ---ValGlyAlaGlyGlyGln 95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       --His 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1413
71
20
52
71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-723-947-77 (1-187) x US-10-437-963-82314 (1-1413)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            53 AlaAspTyrProValProProProAspAsnPheAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OTHER INFORMATION: Clone ID: PAT_MRT4530_81756C.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                70 TrpThrArgProPheHisGluThrAlaAlaAla-
                                                                                                                                         Sequence 82314, Application US/10437963 Publication No. US20040123343A1 GENERAL INFORMATION:
                                   173 AlaTyrAlaGluLeuArgPro 179
                                                                       881 GTCTÁCGCGGAGATGCGGCCA 901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SerSerArgLeuThrLeuGlu-
                                                                                                                                                                                                                                                                                          Boukharov, Andrey A.
Barbazuk, Brad
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7.72e-17
232.50
42.5%
33.2%
                                                                                                                                                                                                La Rosa, Thomas J.
Kovalic, David K.
                                                                                                                                                                                                                                   Zhou, Yihua
Cao, Yongwei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Thr1leSerAsn.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA
ORGANISM: Oryza sativa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              574 TACCTGCAG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       96 HisMetAla-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                       Wei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-437-963-82314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         81
 821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     154
                                                                                                                                                                                                                                                                       APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match:
DB:
                                                                                                                                                                                                                                                      APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            red. No.:
g
                                   ò
                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ь́
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠ
```

11, Appl

Sequence Sequence

Sequence

Sequence

Sequence Sequence Sequence

Seguence

Appli Appli Appli Appli Appli

Sequence

Seguence Sequence

Sequence

Sequence Sequence Sequence Sequence

Sequence Sequence Sequence

Sequence

Sequence

OM protein -

Run on:

Sequence:

Searched:

```
CITY: Arington
STATE: Virginia
COUNTRY: United States of America
COMPUTER READALE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25 (EPO)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/945,056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Coupland, George M.
APPLICANT: Putterill, Joanna J.
TITLE OF INVENTION: Genetic control of flowering
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
ADDRESSEE: Nixon & Vanderhye PC
STREET: 8th Floor, 1100 No. 6077994th Glebe Road
                                                                                                                                                                                                                                                                                                                                                                                                     US-09-513-999C-14394
                                                                                                                                                                                                                                         US-08-949-386-22
US-08-450-22
US-08-944-709A-22
US-08-450-272-22
US-09-949-016-3630
US-09-949-016-3630
                                                                                                                                                                                                                                                                                                                             US-09-949-016-12052
US-09-949-016-13765
US-09-248-796A-4756
                                                                                                                                                                                                                                                                                                                                                                             US-09-266-225D-17
                                                                                                                                                                                                                                                                                                                                                                                         US-09-041-886-22
                                                                                                                                                                                                                                                                                                                                                                                                                              PCT-US95-09383-1
                                                                                                                                                                                                                                                                                                                                                                 US-08-553-110-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION: 800
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/GB95/02561
FILING DATE: 01-NOV-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: GB 9422083.7
FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
NAME: MS MATY J WILSON
REGISTRATION NUMBER: 32,955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; Sequence 7, Application US/08945056
; Patent No. 6077994
12.3 39443
12.3 39443
12.1 1521320
12.1 152145
12.0 55195
12.0 142795
11.9 18596
                                                                                  18596
18596
18597
18597
18597
3563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                    US-08-945-056-7
                        127.5
126.5
126.5
126.5
126
124.5
124.5
124.5
                                                                                                                    124.5
123.5
123.5
123.5
123.5
123.5
123.5
123.5
123.5
                                                                                                                                                                                                                                                      123.5
123.5
123.5
123.5
  Sequence 7, Appli
Sequence 5, Appli
Sequence 1, Appli
Sequence 4, Appli
Sequence 127, App
Sequence 16477, A
Sequence 12384, A
Sequence 12384, A
                                                                               Pebruary 23, 2006, 10:42:28 ; Search time 183 Seconds
(without alignments)
1816.415 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution.
                                                                                                                                            1048
1 MSMSCGLCGANNCPRLMVSP......YESRKAYAELRPRVNGRFVK 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Description
           5.1.7
Biocceleration Ltd.
                                                                                                                                                                                                                                                                               2606114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /cgn2_6/ptodata/1/ina/backfiles1.seg:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /cgn2_6/ptcdata/1/ina/1_COMB.seq:*
/cgn2_6/ptcdata/1/ina/5_COMB.seq:*
/cgn2_6/ptcdata/1/ina/6_COMB.seq:*
/cgn2_6/ptcdata/1/ina/6B_COMB.seq:*
/cgn2_6/ptcdata/1/ina/RE_COMB.seq:*
/cgn2_6/ptcdata/1/ina/PTCCOMB.seq:*
/cgn2_6/ptcdata/1/ina/PTCOMB.seq:*
/cgn2_6/ptcdata/1/ina/PPCOMB.seq:*
/cgn2_6/ptcdata/1/ina/PPCOMB.seq:*
                                                           nucleic search, using frame plus p2n model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-945-056-7
US-08-945-056-5
US-08-945-056-4
US-08-946-056-4
US-09-940-016-16477
US-09-949-016-12384
US-09-949-016-12384
US-09-949-016-12384
                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                       1303057 segs, 888780828 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUMMARIES
           GenCore version
Copyright (c) 1993 - 2006
                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                            0.5
7.0
7.0
                                                                                                                                                                                                        , Ygapext
, Fgapext
, Delext
                                                                                                                                                                                                                                                                                                       Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                US-10-723-947-77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query
Match Length DB
                                                                                                                                                                                           Xgapop 10.0 ,
Ygapop 10.0 ,
Fgapop 6.0 ,
Delop 6.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   448
72549
25603
39154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1101
                                                                                                                                                                               BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16.7
15.2
12.4
12.4
12.3
                                                                                                                                           Perfect score:
                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score
```

Database

Result Š

3629, Ap 3630, Ap 12052, A 13765, A

Sequence Seguence Appli 17, Ar

Sequence

Sequence Sequence Sequence

Sequence

Sequence

14394,

Sequence

```
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . No. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATCACAACAACAACAACAACAACAAACAATGAGTTGTTGTTTAGTGATGACTACCTAGAC 516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            793 ACA---ACAGTTTCACATCCAAAAAGGCACAAAGGGAAGACAGCACAACTACCTGAACCT 849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         850 CTAATTCAGATTCTCAGTCCAATGGACAGAGAAGCTAGAGTCCTGAGATACAGAGAAG 909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ----ccagagaaaaaactacagtgga 618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           619 GATAGAGTTGTTCCGCTCCAACTTGAAGAACAAGAGAAACTTGCGGAACAAAAGCAACAG 678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AlaHisLeuValGlnProProAlaArgAlaHisIleValProPheTyrGlyGlyAlaPhe 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     157 ArgLysArgArgArgTyrAspLysGln11eArgTyrGluSerArgLysAlaTyrAlaGlu 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -- CysGluTyrGlnPhePheAlaHisGlyAsnHisHisHis 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HisHisHisGlySerAlaAlaAspTyrProValProProProAspAsnPheAspHis 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     67 ArgArgThrTrpThrArgProPheHisGluThrAlaAlaAlaGlyAsnSerSerArgLeu 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ThrLeuGluValGlyAlaGlyGly---------GlnHisMet 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ThrasnThrileSerAsnGluAlaIleMetThrileAspThrGluMetMetValGlyPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ---AlaHisTyrProThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   517 CTTGCTGATTACAACTCCAGTATGGACTACAAGTTCACCAGTCAATACAATCAACCTCGA
                                                                                                                                                                                                                                                                                                                                                                      Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   177 LeuArgProArgValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-723-947-77 (1-187) x US-08-945-056-7 (1-1101)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HisHisHisHisHisHisHisGlnGluHisGlnLeu-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              577 CATAAACAAGACTGCATCGTA---
REFERENCE/DOCKET NUMBER: 6:
TELECOMMINICATION INFORMATION
TELEPHONE: (703) 816-4010
INFORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                     TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
HYPOTHETICAL: YES
                                                                                                                                                                                                                                                                                                                                                          3.41e-10
188.00
43.5%
28.3%
17.9%
                                                                                                                                                                                                                                    ORGANISM: Brassica napus
                                                                                           LENGTH: 1101 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                             1..1098
                                                                                                                                                                                                                                                                                                                                                                                                              Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                              ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                           ;
US-08-945-056-7
                                                                                                                                                                                                                                                                                                                                                      Alignment Scores:
                                                                                                                                                                                                                                                                         NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-945-056-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98
                                                                                                                                                                                                                                                         FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                          .. oN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              윱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠ
```

```
---GTACCAGAGAAAACTACGGTGGAGAT 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   522 AGAGTTGTTCCACTCCAACTTGAAGAAACAAGAGGAAACTTGCACCACAAGGAACATAAT 681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       --- AlaHisLeu 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 --- CysGluTyrGlnPhePheAlaHisGlyAsnHisHisHisHis 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                517 GCTGATTACAACTCGAGTATGGACTACAAGTTCACTGGTCAATACAATCAACCTACTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    48 HisHisGlySerAlaAlaAspTyrProValProProProProAspAsnPheAspHisArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 68 ArgThrTrpThrArgProPheHisGluThrAlaAlaAlaGlyAsnSerSerArgLeuThr
                                                                                                                                                              STREET: BEIN FLOOK, 1100 NO. 801/371111 GLEDE ACGUL
CITY: Atlington
STATE: Virginia
COUNTRY: United States of America
COMPUTER: United States of America
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBW-FC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25 (EPO)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/945,056
FILING DATE: 0-0CT-1997
CLASSIFICATION DATA:
APPLICATION NUMBER: PCT/GB95/02561
FILING DATE: 01-NOV-1995
PRIOR APPLICATION NUMBER: PCT/GB95/PSF
FILING DATE: 01-NOV-1995
PRIOR APPLICATION NUMBER: GB 9422083.7
FILING DATE: 02-NOV-1994
ATTORNEY AGENT INFORMATION:
                                                                                                                            E: Nixon & Vanderhye PC
8th Floor, 1100 No. 6077994th Glebe Road
APPLICANT: Coupland, George M.
APPLICANT: Putterill, Joanna J.
ITILE OF INVENTION: Genetic control of flowering
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
ADDRESSEE: Nixon & Vanderhye PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-723-947-77 (1-187) x US-08-945-056-5 (1-1101)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23 HisHisHisHisHisHisGlnGluHisGlnLeu---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     577 CATAAACAAGACTGCACC-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REGISTRATION NUMBER: 32,955
REFERENCE/DOCKET NUMBER: 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELECOMMUNICATION INFORMATION TELEPHONE: (703) 816-4000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE: DNA (genomic) HYPOTHETICAL: YES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Brassic napus FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION FOR SEQ 1D NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 1101 bace and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ms Mary J Wilson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nucleic acid
IDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      34 -----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; NAME/KEY:
; LOCATION:
US-08-945-056-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Alignment Scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
```

Sequence 5, Application US/08945056 Patent No. 6077994 GENERAL INFORMATION:

ò g g ò 셤 ð 셤 8

ò

```
||| ::: ||| || || || 625 GGGGGGGGCCACCAGTGCCATAACTTGAAGAATCAAGGGGCCACCAGTGCCATAAAC 684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   910 -----ATGGACAGAGAAGCCAGGGTCCTGAGATACAGAGAGAAGAGAAAAGAAAA 963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              82 AsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHisLeuVal 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        102 GinProProAlaArgAlaHisIleValProPheTyrGlyGlyAlaPheThrAsnThrIle 121
                                                                                                                                                                                                                                                                                                                                                         9 GlyAlaAsnAsnCysProArgLeuMetValSerProlleHisHisHisHisHisHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       685 CAACAGAATTTTCAGTTCAATATCAAATATGGCTCCTCAGGGACTCACTACAACGACAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      46 ------HisHisHisHisGlySerAlaAlaAspTyrProValProProProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62 AspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAlaGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ----GAGTCAACAGCATGTGTCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      122 SerAsnGluAlaIleMetThrIleAspThrGluMetMetValGlyProAlaHisTyrPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                142 ThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLysArgLysArgArgArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       162 TyrasplysGlnIleArgTyrGluSerArgLysAlaTyrAlaGluLeuArgProArgVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 745 GGTTCCATTAACCATAACGCATACATTCATCCATGGAAACTGGTGTTGTGCCG--
                                                                                                                                                                                                                                                                                                                                                                                                                                                        29 GlnGluHisGlnLeuCysGluTyrGlnPhePheAlaHisGlyAsnHisHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               :::|||
820 ACAGCTTCACACCCAAGAACGCCCAAAGGGACAGTAGAGCAA-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B: Nixon & Vanderhye PC
8th Floor, 1100 No. 6077994th Glebe Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Coupland, George M.
APPLICANT: Putterill, Joanna J.
TILLE OF INVENTION: Genetic control of flowering
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
ADDRESSEE: Nixon & Vanderhye PC
                                                                                                                                                                    Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                               US-10-723-947-77 (1-187) x US-08-945-056-1 (1-1124)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          862 CAACCTGACCTGCAAGCCAGATGATA-----
                                                                                                                                                                                                                                         [ndel8:
                                                                                                                                                Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STATE: Virginia
COUNTRY: United States of America
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1024 AATGGCCGGTTCGCAAAG 1041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-945-056-4
; Sequence 4, Application US/08945056
; Patent No. 6077994
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  182 AsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3: Floppy disk
IBM PC compatible
                                                                                                                                           1.82e-08
175.00
40.9%
27.4%
16.7%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CITY: Arlington
STATE: Virginia
                                                                                                                                                                                   Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                       Alignment Scores:
Pred. No.:
                      NAME/KEY:
LOCATION:
US-08-945-056-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
101 ValGlnProProAlaArgAlaHisIleValProPheTyrGlyGlyAlaPheThrAsnThr 120
                                                                                                                    798
                                                                                                                                                               121 IleSerAsnGluAlaIleMetThrIleAspThrGluMetMetValGlyPro---AlaHis 139
                                                                                                                                                                                                  :::||||:::
799 GTTTCACATCCAAAAACGCACAAAAGGGAAGATAGAGAAACTACCTGAACCTCTAATTCAG 858
                                                                                                                                                                                                                                                             140 TyrProThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLysArgLysArg 159
                                                                                                                                                                                                                                                                                           ArgArgTyrAspLysGlnIleArgTyrGluSerArgLysAlaTyrAlaGluLeuArgPro 179
                                                                                                                                                                                                                                                                                                                                                                                     742 TACAATCCATCAATGGAAACTGACTTTGTTCCG---GAGCAGACAGCACCTGACAAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25 (EPO)
APPLICATION DATA:
APPLICATION NUMBER: US/08/945,056
FILING DATE: 20-OCT-1997
CLASSIFICATION: 800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET: 8th Floor, 1100 No. 6077994th Glebe Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1, Application US/08945056
Patent No. 6077994
GENERAL INFORMATION:
APPLICANT: Coupland, George M.
APPLICANT: Putterill, Joanna J.
TITLE OF INVENTION: Genetic control of flowering
UNMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 20-OCT-1997
CLASSIFICATION: 800
PRIOR APPLICATION NUMBER: PCT/GB95/02561
FILING DATE: 01-NOV-1995
PRIOR APPLICATION DATA: 8942083.7
APPLICATION NUMBER: GB 9422083.7
FILING DATE: 02-NOV-1994
ATTORNEY AGENT INFORMATION: NAME: MS MALY J WILSON
REGISTRATION NUMBER: 32,955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   979 AGGATCAATGGACGGTTTGCAAAG 1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                        180 ArgvalAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CHROMOSOME/SEGMENT: chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nixon & Vanderhye
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY: 11near
MOLECULE TYPE: CDNA to mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (703) 816-4000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS: LENGTH: 1124 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN: Landsberg erecta
POSITION IN GENOME:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Arlington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEPHONE:
```

861

61

```
ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      53 AlaAspTyrPro----
                                                                                      Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                           -09-949-016-16477/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA
ORGANISM: Human
                JS-09-640-211A-327
                                             Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match:
DB:
                                                                                                                      Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE
                                                            Pred. No.:
                                                                            Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3820 GACAGAGAAGCCAGGGTCCTGAGATACAGAGAAGAGGAGGAAGAAGAAGAATTTGAGAAG 3879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               145 GluargalaalalysValMetArgTyrArgGluLysArgLysArgArgArgArgTyrAspLys 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          165 GlnIleArgTyrGluSerArgLysAlaTyrAlaGluLeuArgProArgValAsnGlyArg 184
         APPLICANT: Shenk, Michael A. Applicant: Shenk, Michael A. Applicant: McGrath, Annette APPLICANT: Glenn, Matthew TITLE OF INVENTION: Compositions and Methods for the TITLE OF INVENTION: Modification of Gene Transcription FILE REFERENCE: 11000.1021CJU CURRENT APPLICATION NUMBER: US/09/640,211A CURRENT FILING DAS: 2069
NUMBER OF SEQ ID NOS: 2268
SOFTWARE: FASTSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-723-947-77 (1-187) x US-08-945-056-4 (1-4201)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 327, Application US/09640211A Parent No. 6833446 GENERAL INFORMATION:
PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: Arabidopsis thaliana
STRAIN: Landsberg erecta
                                                                                                                                                                                                                                                                                                                                                                              DNA (genomic)
                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
LENGTH: 4201 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3.56e-07
170.00
88.4%
72.1%
                                                                                                                                                                                                                                                                                                                                                                                                                                        POSITION IN GENOME:
MAP POSITION: chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ||| |||
3940 TTCGCAAAG 3948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        185 PheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-640-211A-327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Alignment Scores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID NO 327
LENGTH: 448
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-945-056-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

```
us-uy-yey-ubc-lb4//C

j Sequence 16477, Application US/09949016

j Patent No. 6812339

j GENERAL INFORMATION:
    APPLICANT: VENTER, J. Craig et al.
    APPLICANT: VENTER, J. Craig et al.
    TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
    TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
    TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
    CURRENT PELING DATE: 2000-04-14
    PRIOR PELING DATE: 2000-10-20
    PRIOR FILING DATE: 2000-10-03
    PRIOR FILING DATE: 2000-10-03
    PRIOR FILING DATE: 2000-10-03
    PRIOR FILING DATE: 2000-10-06
    NUMBER OF SEQ ID NOS: 207012
    SOFTWARE: PRESEE FREESEQ for Windows Version 4.0
    SEQ ID NO 16477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ---cacaarcarcarcaccaccaccaccarcacra 33295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   145 GluargalaalaLysValMetArgTyrArgGluLysArgLysArgArgArgTyrAsDLys 164
                                                                                                                                                                                                                                                                                                              165 GlnIleArgTyrGluSerArgLysAlaTyrAlaGluLeuArgProArgValAsnGlyArg 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16 LeuMetValSerProlleHisHisHisHisHisHis------HisGlnGluHisGln 32
                                                                                                                                                                                                                                                               75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ---ValProProProProAspAsnPhe 64
                                                                                                                                                                                                                                         16 GACAGGGAAGCGAGGGTCCTGAGGTACAGGAGAAGAAGAAGAAGAACGCGAAGTTCGAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            33 LeuCysGluTyrGlnPhePheAlaHisGlyAsnHisHisHisHisHisHisGlySerAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-723-947-77 (1-187) x US-09-949-016-16477 (1-72549)
    Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                    US-10-723-947-77 (1-187) x US-09-640-211A-327 (1-448)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
                                                                                                                          Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: misc_feature

// LOCATION: (1)...(72549)

OTHER INFORMATION: n = A,T,C or

US-09-949-016-16477
1.38e-07
161.00
83.7%
67.4%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0.129
132.00
44.7$
32.6$
12.6$
                                                                                                                                                                                                                                                                                                                                                                                                           185 PheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                          136 rrcgcgaag 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  33330 -----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
Best Local Similarity:
```

S

```
APPLICATI: VENTER, J. Craig et al.
APPLICAT: VENTER, J. Craig et al.
ITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
ITLIE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
ITLIE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
CURRENT FILING DATE: 2000-04-14
PRIOR APPLICATION NUMBER: 60/241,755
PRIOR APPLICATION NUMBER: 60/241,755
PRIOR APPLICATION NUMBER: 60/231,498
PRIOR APPLICATION NUMBER: 60/231,498
PRIOR PLING DATE: 2000-09-08
NUMBER OF SEQ ID NOS: 207012
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 12384
LENGTH: 39154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: VENTER, J. Craig et al.
TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
FILE REFERENCE: CL001307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16487 CACCATCACCACCACCACCACCATCACCACCATCATTGCCACCACCATCATCACCACCAT 16428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16427 CACCACCACCACCÁCCÁTCACCACCACCACTA-TCGGCACCATCACCCCCCAACACCACCA 16369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16368 CCATCACCACCATTACCACCACCATCACCATCACCATGGCACTGGCACCTCCACCG 16309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22 HisHisHisHisHisHisGlnGluHisGlnLeuCys-----GluTyrGlnPhePhe 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                40 AlaHisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ----ProPro-AspAsnPheAspHisArgArgThrTrp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       39154
28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-723-947-77 (1-187) x US-09-949-016-12384 (1-39154)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION NUMBER: US/09/949,016
CURRENT FILING DATE: 2000-04-14
PRIOR APPLICATION NUMBER: 60/241,755
PRIOR APPLICATION NUMBER: 60/237,768
PRIOR FILING DATE: 2000-10-03
PRIOR FILING DATE: 2000-09-08
PRIOR FILING DATE: 2000-09-08
                                           Sequence 12384, Application US/09949016
Patent No. 6812339
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-949-016-12801/c
. Sequence 12801, Application US/09949016
. Patent No. 681233
. GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCATION: (1)...(39154)
OTHER INFORMATION: n = A,T,C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0.113
129.00
50.0%
43.8%
12.3%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16308 GCACTACCAC 16299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             72 gProPheHis 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
Best Local Similarity:
Query Match:
                           -09-949-016-12384/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM: Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-949-016-12384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ଚ
33294 TCATCACTACCACTATCATCACCACTATCATTGTCACCACCACCATCATCACCA 33235
                                                                                                       ---CACCACCA-TCATCACCATCATCATCA 33191
                                                                                                                                                                                   -- 33087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3722 TTTGCCCAACACTGTCAAGAGTGGTACCTACACGGCCTCATTTTCTGTAACAACCCTCCG 3781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3587 CACGACCACAATCACTGTTATCACCATCACCACCTCAGTCCTCACTACCGTCATCC 3646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----ATGCTGTTGTTAAATGCCAGCTC 3721
                                                                                                                                                          85 ArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHisLeuValGlnProPro 104
                                                                                                                                                                                                                                               105 Ala---ArgAlaHisIleValProPheTyrGlyGlyAlaPheThrAsnThrIleSerAsn 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -----MetAlaHisLeuValGlnProPro 104
                                                                       84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ---GlySerAla 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAlaHis 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              53 AlaAspTyrProValProProProProAspAsnPheAspHisArgArgThrTrpThrArg 72
                                                                  65 AspHisArgArgThrTrpThrArgProPheHisGluThrAlaAlaGlyAsnSerSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    73 ProPheHisGluThrAlaAlaAlaGlyAsnSerSerArgLeuThrLeuGluValGlyAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 3, Application US/09819607

Patent No. 6686176

GENERAL INFORMATION:

APPLICANT: BEASLEY, Ellen et al

TITLE OF INVENTION: ACID MOLECULES ENCODING HUMAN KINASE PROTEINS,

TITLE OF INVENTION: THEREOF

TITLE OF INVENTION: THEREOF

FILE REFERENCE: CLOU178

CURRENT APPLICATION USER: US/09/819,607

CURRENT FILING DATE: 2001-03-29
                                                                                                                                                                                                                                                                           :::
33140 TCCTATCACCATCATCATCCCTATTATCACCCCATCGCCATCACCACATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3782 AGGCAAATGTCTGTATCCCCATTTTACCGAAGAGGAGGC 3820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 105 AlaArgAlaHisIleValProPheTyr-----GlyGly 115
                                                                                                                                                                                                                                                                                                                                                                33086 -----ATCATCACCATCATCATCATA 33057
                                                                                                                                                                                                                                                                                                                                     124 GluAlaileMetThrileAspThrGluMetMetVal 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         42 GlyAsnHis-----HisHisHisHisHis---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-723-947-77 (1-187) x US-09-819-607-3 (1-25603)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT FILING DATE: 2001-03-29
NUMBER OF SEQ ID NOS: 5
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         93 GlyGlyGlnHis-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  130.00
39.8%
27.4%
12.4%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0.0498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3698 -----
                                                                                                              33234 CCCCATCACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA
ORGANISM: Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQ ID NO 3
LENGTH: 25603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-819-607-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-819-607-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ..
02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score:
                                                                                                            유
                                                                                                                                                          ò
                                                                                                                                                                                                   음
                                                                                                                                                                                                                                                                                         원
                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                  ò
                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
```

```
APPLICANT: VENTER, J. Craig et al.
APPLICANT: VENTER, J. Craig et al.
TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
FILE REFERENCE: CLOO1307
CURRENT APPLICATION NUMBER: US/09/949,016
CURRENT FILING DATE: 2000-04-14
PRIOR PELICATION NUMBER: 60/241,755
PRIOR APPLICATION NUMBER: 60/231,768
PRIOR APPLICATION NUMBER: 60/231,498
PRIOR FILING DATE: 2000-100-09
PRIOR FILING DATE: 2000-100-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16487 CACCATCACCACCACCACCACCATCACCACCATCATTGCCACCACCATCATCACCACCAT 16428
                                                                                                                                                                              16368 CCATCACCACCATTACCACCACCATCACCATCACCATGGCCACTGGCACCTCCACCG 16309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ---GluTyrGlnPhePhe 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ---GluTyrGlnPhePhe 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   40 AlahisGlyAsnHisHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProPro
                                                                                                                                                                                                                                       ------ProPro-AspAsnPheAspHisArgArgThrTrp-----ThrAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----Propro-AspAsnPheAspHisArgArgThrTrp-----ThrAr
                                                                                                                                                   40 AlaHisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProPro
                      US-10-723-947-77 (1-187) x US-09-949-016-14326 (1-39443)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-723-947-77 (1-187) x US-09-949-016-14327 (1-39443)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22 HisHisHisHisHisHisHisGlnHisGlnLeuCys---
                                                                    HisHisHisHisHisHisHisGlnGluHisGlnLeuCys---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQ ID NOS: 207012
SOFTWARE: PastSEQ for Windows Version 4.0
SEQ ID NO 14327
LENGTH: 39443
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 14327, Application US/09949016
Patent No. 6812339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: misc_feature

| LOCATION: (1)...(39443)

| THER INFORMATION: n = A,T,C or G

US-09-949-016-14327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0.114
129.00
50.0%
43.8%
12.3%
                                                                                                                                                                                                                                                                                                                                                      | :::|||
16308 GCACTACCAC 16299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | :::|||
16308 GCACTACCAC 16299
                                                                                                                                                                                                                                                                                                                             72 gProPheHis 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              72 gProPheHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-949-016-14327/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Alignment Scores:
                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURE
                                                                                                          셤
                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PPLICANT: VENTER, J. Craig et al.
ITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
ITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16487 CACCATCACCACCACCACCACCATCATTGCCACCACCATCATCACCACCAT 16428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16427 CACCACCACCACCACCATCACCACCACCACCA-TCGGCACCATCACCCCCAACACCACCA 16369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16368 CCATCACCACTATACCACCACCATCACCATCACCATGGCACTGGCACTGCACCGG 16309
                                                                                                                                                                                                                                                                                                                                                                                                                                                            HisHisHisHisHisHisHisGluHisGluHisGlnLeuCys-----GluTyrGlnPhePhe 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ---ProPro-AspAsnPheAspHisArgArgThrTrp-----ThrAr 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                40 AlaHisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProPro
                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-723-947-77 (1-187) x US-09-949-016-12801 (1-39154)
                                                                                                                                                                                                                                                         Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
Matches:
SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 12801
LENGTH: 39154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS: 207012
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION NUMBER: US/09/949,016
CURRENT FILING DATE: 2000-04-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-949-016-14326/c
; Sequence 14326, Application US/09949016
; Patent No. 6812339
; Patent NorMariON:
; APPLICANT: VENTER, J. Craig et al.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT FILING DATE: 2000-04-14
PRIOR APPLICATION NUMBER: 60/241,755
PRIOR APPLICATION NUMBER: 60/237,768
PRIOR APPLICATION NUMBER: 60/237,768
PRIOR FILING DATE: 2000-10-03
PRIOR APPLICATION NUMBER: 60/231,498
PRIOR PILING DATE: 2000-09-08
                                                                                                                                                 LOCATION: (1)...(39154)
OTHER INFORMATION: n = A,T,C or G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION: (1)...(39443)
OTHER INFORMATION: n = A,T,C or G
                                                                                                                                                                                                                                                           0.113
129.00
50.0%
43.8%
12.3%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0.114
129.00
50.0%
43.8%
12.3%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16308 GCACTACCAC 16299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gProPheHis 75
                                                                                                        FEATURE:
NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE:
NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                    Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity:
Query Match:
DB:
                                                                 TYPE: DNA
ORGANISM: Human
                                                                                                                                                                                              US-09-949-016-12801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
                                                                                                                                                                                                                                         Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQ ID NO 14326
LENGTH: 39443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rype: DNA
                                                                                                                                                                                                                                                                                                                                                  Query Match:
                                                                                                                                                                                                                                                                ..
90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
```

```
Alignment Scores:
Pred. No.:
                                              Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score:
                                              Sequence 16939, Application US/09949016

Batent No. 6812339

GENERAL INFORMATION:
PAPLICART: VERNER, J. Craig et al.
TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF;
FILE REFERENCE: CLO01307

CURRENT FILING DATE: 2000-00-114

PRIOR FILING DATE: 2000-10-20

PRIOR APPLICATION NUMBER: 60/241,755

PRIOR APPLICATION NUMBER: 60/237,768

PRIOR APPLICATION NUMBER: 60/237,768

PRIOR APPLICATION NUMBER: 60/231,498

PRIOR FILING DATE: 2000-10-03

PRIOR FILING DATE: 2000-09-08

WUMBER OF SEQ ID NOS: 207012

SEQ ID NOS: 207012

SEQ ID NO 16939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-949-016-13845/c

Sequence 13845, Application US/09949016

Patent No. 6812339

GENERAL INFORMATION:
APPLICANT: USTUER, J. Craig et al.
TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
FILE REFERENCE: CLOO1307

CURRENT PILING DATE: 2000-04-14

PRIOR APPLICATION NUMBER: 60/241,755

PRIOR PILING DATE: 2000-10-20

PRIOR FILING DATE: 2000-10-03

PRIOR FILING DATE: 2000-10-03

PRIOR FILING DATE: 2000-10-03

PRIOR FILING DATE: 2000-09-08

NUMBER OF SEQ ID NOS: 207012

SOFTWARE: PEASECA for Windows Version 4.0

SEQ ID NO 13845

LENGTH: 152132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ---CACCACCCT 29333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ProlleHisHisHisHisHisHisGlnGlu-----HisGlnLeuCysGluTyr 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GlnPhePheAlaHisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-723-947-77 (1-187) x US-09-949-016-16939 (1-67620)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29380 CAGCACTACCATCACCACCACCACCACCACCACCACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29332 TA-CCACCTCCACCA 29319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            57 ValProProProPro 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      127.50
60.08
48.98
12.28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                       US-09-949-016-16939/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; TYPE: DNA
; ORGANISM: Human
US-09-949-016-16939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ) ORGANISM: Human
US-09-949-016-13845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 67620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ठ
```

```
US-09-949-016-12371/c

Sequence 12371, Application US/09949016

Patent No. 6812399

GENERAL INFORMATION:

APPLICANT: VENTER, J. Craig et al.

TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED

TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF;

TITLE OF INVENTION: UNMBER: US/09/949,016

CURRENT APPLICATION NUMBER: US/09/949,016

CURRENT FILING DATE: 2000-04-14

PRIOR APPLICATION NUMBER: 60/241,755

PRIOR PILING DATE: 2000-10-20

PRIOR PILING DATE: 2000-10-03

PRIOR FILING DATE: 2000-09-08

NUMBER: FSQ ID NOS: 207012

SOFTWARE: FSECEND NOS: 207012

SEQ ID NO 12371

LENGTH: 152145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 15554, Application US/09949016

Patent No. 6812339
GENERAL INFORMATION:
APPLICANT: VENTER, J. Craig et al.
TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
CURRENT APPLICATION NUMBER: US/09/949,016
CURRENT FILING DATE: 2000-04-14
                                                                                                                                                                                                                                                                                                                             136756 CACCACCACCACCACCACCACCT-CCACCACCACCACCACCACCACCACCACCA 136698
                                                                                                                                                                                                                                 HisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAlaHis
                                                                                                                                                                                                                                                                                              42 GlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22 HisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAlaHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    42 GlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-723-947-77 (1-187) x US-09-949-016-12371 (1-152145)
                                                                                                                                                         US-10-723-947-77 (1-187) x US-09-949-016-13845 (1-152132)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length:
Matches:
Conservative:
Mismatches:
Indels:
Length:
Matches:
Conservative:
                                                                       Mismatches:
                                                                                       Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: 60/241,755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             126.50
57.5%
52.5%
12.1%
                                        57.5$
52.5$
12.1$
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
Best Local Similarity:
Query Match:
                                        Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 15
US-09-949-016-15854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA
CRGANISM: Human
US-09-949-016-12371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Alignment Scores:
Pred. No.:
                                                                                                                                                                                                    22
```

US-10-723-947-77 (1-187) x US-09-949-016-15854 (1-55195) Qy 22 HigHigHigHigHigHigHigGlnGluHigGlnLeuĊysGluTyrGlnPhePheAlaHig 41

ઠે

Search completed: February 23, 2006, 12:01:53 Job time : 221 secs

Arabidops VVD132B12

VVB072E11 VVB104H08

protein

Run on:

Sequence:

Title: Perfect

Searched:

```
CZ787328 OC Ba015
B107473 IP1 15 F0
CD010039 VVB103B05
CC728227 OGCX57TM
DR930452 EST112199
CC685007 OGOAS10TV
CC685002 OGOAS10TV
CK27343 EST721421
CK274891 EST721969
CV545348 SS1281.tx
A1488780 EST2720969
CV545348 SS1281.tx
A1488780 EST2721969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Oryza sativa (indica cultivar-group)
Oryza sativa (indica cultivar-group)
Cryza sativa (indica cultivar-group)
Bukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta,
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Enthartoideae; Oryzaa; Oryza.

1 (bases 1 to 864)
Ma,L., Wangc,J., Chen,C., Liu,X., Su,N., Li,L., Wang,X., Cao,M.,
Jiao,Y., Sun,N., Zhang,X., Bao,J., Sun,D., Zhao,H., Yuan,L.,
Wong,G.K.S., Deng,X.W. and Wang,J.
An analysis of transcriptional regulation of the rice genome and
its comparison to Arabidopsis
                                                                                                                                                                                                                                                                                                                                                                                                                                        CL012630 ZMMBBb053
CL925503 OA ABa003
CB003731 VVB032E05
CB001303 VVB005E07
                                                           CD010575 VVB113D03
BM436387 VVA003D01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OSIFCC023161 Oryza sativa Express Library Oryza sativa (indica cultivar-group) genomic, genomic survey sequence.
          BX832165 P
CB911506 V
CD007533 V
CD010195 V
                                                                                                                                                                                                                                                                                                                                                                                                    CK255880 E
CK279398 E
CK245114 E
                                                                                                                                                                                                                                                         BU084004
BM271055
                                                                                                                                                                                                                                                                                 BQ299156
BU081045
CX538017
                                                                                                                                                                                                                                                                                                                                               BQ588069 ECV458983 BZ734187 CCA800072 E
                                                                                                                                                                                                                                                                                                                       CA919328
CK248987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Beijing Institute of Genomics
Chinese Academy of Sciences, Beijing 101300, China
Tel: 86-10-80481559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Email: chenchen@genomics.org.cn
Rice genomic sequence.
Class: exon-trapped.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         864 bp
                                                            CD010575
BM436387
                                                                                                                                                                                                                                                                                                                                                                                                                                        CL012630
                                                                                                                                                                                                                                                                                                                                                                                                                 CK279398
CK245114
                                                                                                                                          DR930452
                                                                                                                                                                                                                                                                                                                         CA919328
                                                                                                                                                                                                                                                                                                                                       CK248987
                                                                                                                                                                                                                                                                                                                                                                                                     CK255880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CB001303
                                                                                                                                                                                                                                                                                                                                                                 CV458983
                                                                                                                                                                                                                                                                                                                                                                                         CA800072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Chen Chen
Department of Bioinformatic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CL972569.1 GI:52399671
                                                  100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fax: 86-10-80488676
                                                                                                                                                                                                                                              CL972569
194.5
194.5
194.5
194
194
194
                                                                                                                                                                                                                                                                                                                                                                                                                                        193.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 1
CL972569
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
 -MODELE frame + D21.model - DEV=x1h
-Q-/abss/ABSSWEB spool/US10723947/runat 23022006_085359_16224/app query.fasta_1
-Q-/abss/ABSSWEB spool/US10723947/runat 23022006_085359_16224/app query.fasta_1
-Q-/abss/ABSSWEB spool/US10733947/runat 23022006_085359_16224/app query.fasta_1
-UNITS=bits -START=1 - END=-1 - MATATX-ED10 - TRANS=human40.cdi - LIST=45
-DOCALIGN=200 - THR_SCORE=pct - THR_MAX=100 - THR_MIN=0 - ALIGN=15 - MODE=LOCAL
-OUTFMT=pto - NORM=ext - HEAPSIZE=500 - MINIEN=0 - MAXIEN=2000000000 - HOST=abss02h
-USRE-USI0723947_@CGN 1 1_5315_@runat_2302206_085359_16224 - NCPU=6 - ICPU=3
-NO_MMAP - NGG_SCORES=0 - WAIT - DSPBLOCK=100 - LONGLOG - DEV TIMEOUT=120
-WARN_TIMEOUT=30 - THREADS=1 - XGAPOP=10 - XGAPEXT=0.5 - FGAPOP=6 - FGAPEXT=7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CV291360 aof01-5ms
DR750621 48-L02059
DN604709 JCAt5g576
BUG36028 044E12 In
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CL972569 OBIFCC023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DN238319 MUC4LH100
BX831971 Arabidops
                                                                                                 (without alignments)
2389.835 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                 MSMSCGLCGANNCPRLMVSP......YESRKAYAELRPRVNGRFVK 187
                                                                                      February 23, 2006, 10:39:32; Search time 3661 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Description
                                                                                                                                                                                                                                                                                                82156650
          GenCore version 5.1.7
Copyright (c) 1993 - 2006 Biocceleration Ltd
                                                            using frame_plus_p2n model
                                                                                                                                                                                                                                                                       41078325 segs, 23393541228 residues
                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUMMARIES
                                                                                                                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CL972569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DN238319
CNS09ZOO
CV291360
DR750621
DN604709
BUG36028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -DELEXT=7
                                                                                                                                                                                    BLOSUM62
Xgapop 10.0 , Xgapext
Ygapop 10.0 , Ygapext
Fgapop 6.0 , Fgapext
nelop 6.0 , Delext
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          n
                                                                                                                                                                                                                                                                                                                        Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -YGAPOP=10 -YGAPEXT=0.5 -DELOP=6
                                                                                                                                        US-10-723-947-77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      യയഗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gb_gssl:*
gb_gss2:*
gb_gss3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       est1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            689
1305
848
815
817
829
                                                              nucleic search,
                                                                                                                                                                                                                                                                                                                                                                                                                   Command line parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20.9
20.3
119.8
119.8
                                                                                                                                                      score:
                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   253
219
213
209
207
207
```

Database :

Result 8

υυ

GSS 21-SEP-2004

E012336-0

EST725476

acuminata subsp. burmannicoides cDNA 5', mRNA sequence

```
DRIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----CATCGCCACGATGAT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181 GGATTCCCCCTTCGTCTTCCCGCCGAGTGCGTGCGGGATCGGCGCCCCGGGCGCCACCG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     89 GluValGlyAlaGlyGlyGlyGlnHisMetAlaHisLeuValGlnProProAlaArgAlaHis 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      109 ileValProPheTyrGlyGlyAlaPheThrAsnThrIleSerAsnGluAlaIleMetThr 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ||||::: ::: ||| ||||||::: ||||||::: |||||::: ||||::: ||||::: ||||::: |||::: |||::: |||::: |||::: |||::: |||::: |||::: |||::: |||::: |||::: |||::: |||::: |||::: |||::: |||::: |||::: |||::: ||::: |||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||:: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||:: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||:: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: ||::: 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   144 GlnGluArgAlaAlaLysValMetArgTyrArgGluLysArgLysArgArgArgTyrAsp 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LysGlnIleArgTyrGluSerArgLysAlaTyrAlaGluLeuArgProArgValAsnGly 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241 GTGCACGAGTTCCTTC-----GGCAACGACGGCGGCGACGACGAGGC 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        35 CATCATCGGCAGCCGCCGTACGACGGCGTCGTGGCCGCCGTCGCTGTTCAGGAGGAAC 414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCGGCCCCGCCGGCTCACGTTCGACGTCTCCCTCGGCGGACGGCCCGACCTGGACGCC 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       592 greecceccareccearerresegasesecrreaacceaacesegreereseceaare 651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ------ProAspAsnPheAspHisArgArg 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              69 ThrTrpThrArgProPheHisGluThrAlaAlaAlaGlyAsnSerSerArgLeuThrLeu 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      712 AAGCAAATCCGGTACGCGTCCAGAAAAGCCTATGCCGAGATGAGGCCCCGAGTGAGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             --- CysProArgLeuMetValSerProIleHisHisHisHisHisHisGlnGluHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----GluTyrGlnPhePheAlaHisGlyAsnHisHisHisHisHisHisGlySerAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sativa (indica cultivar-group)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 --SerCysGlyLeuCysGlyAlaAsnAsn-
/organism="Oryza sativa (indica cultivar--
/mol_type="genomic DNA"
/mol_type="leaxon:39946"
/clone lib="Oryza sativa Express Library"
/note="Oryza sativa exon trapped genomic and the column of the c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ---AspTyrProValProPro----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       129 IleAspThrGluMetMetValGlyProAlaHisTyrPro----
                                                                                                                                                                                                                                                                                                                                                                                            864
79
19
76
70
                                                                                                                                                                                                                                                                                                                                                                                            Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -----GlnLeuCys-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-723-947-77 (1-187) x CL972569 (1-864)
                                                                                                                                                                                                                                                                                                                                                                                       2.81e-14
253.00
40.2%
32.4%
24.1%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              151 TGTTGCTCCCGC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ala----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 -----
                                                                                                                                                                                                                                                                                                                                                    Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 2
DN238319
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                  ..
0
                                                                                                                                                                                                                                                                                                                                                         Alignment
                                                                                                                                                                                                                                                   DRIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    윤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

EST 14-JUL-2005

DN238319 689 bp mRNA linear EST 14-JU MUC4LH1006_A07_.b_049. Musa acuminata leaves HOT stress Musa

```
/ Oultivar="Wariety Calcutta 4 (AA)"
/ Cultivar="Wariety Calcutta 4 (AA)"
/ Sub Species="burmannicoides"
/ Ab xref="taxon:21592"
/ Lisue type="Leaf"
/ Clone Tib="Musa acuminata leaves HOT stress"
/ Clone Tib="Musa acuminata leaves HOT stress"
/ Clone Tib="Musa acuminata ssp. burmannicoides var. Calcutta
/ (AA) plants a
/ (AA) plants so caminata ssp. burmannicoides var. Calcutta
/ (AA) plants were obtained from the Banana Germplasm Bank at
Babla, Brazil (Musa Germplasm Information System - MGIS
accession number ITC0249). Prior to temperature stress
conditions, banana plants were maintained for 48 hours in
an environment chamber at 250c with 80% air hunidity, and
a 16 hour light/ 8 hour dark cycle. Leaf samples (H0) were
rise to 350c, samples were collected after one (H1), two
(H2) and three (H3) hours with the temperature raised to
450c, new samples were also collected after one (H4), two
(H5), three (H6), nine (H7), and 21 hours (H8) following
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the change in temperature. Tissues were immediately frozen in liquid N and stored at -800C until total RNA extraction. Total RNA was isolated using the Plant RNA Reagent kit (Invitrogen). Total RNA preparations from the eight time point samples were combined in equivalent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           quantities. The resulting bulked sample (1 mg of total RNA) was then submitted to poly (A) + RNA purification using the FastTrack 2.0 mRNA Isolation Kit (Invitrogen). Full length cDNA enriched, non-normalized, cDNA ibraries were constructed with the Creator Smart cDNA library kit and cloned into the pDNR-LIB vector (Clontech)."
                                                                                                                                        Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta;
Spermatophyta, Magnoliophyta, Liliopsida, Zingiberales, Musaceae;
                                                                                                                                                                                                                                                  Santos, C.M.R., Martins, N.F., Horberg, H.M., de Almeida, E.R.P., Coelho, M.C.F., Togawa, R.C., da Silva, F.R., Caetano, A.R., Miller, R.N.G. and Souza, M.T. Jr.
                                                                                                                                                                                                                                                                                                        Analysis of expressed sequence tags from Musa acuminata s burmannicoides, var. Calcutta 4 (AA) leaves submitted to temperature stresses
Theor. Appl. Genet. 110 (8), 1517-1522 (2005)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          organism="Musa acuminata subsp. burmannicoides"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    68
77
77
50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Embrapa Recursos Geneticos e Biotecnología CxP 02.372, CEP 70.770-900, Brasilia - DF, Tel: +55(61)448.4741 Fax: +55(61)448.454 Email: felipes@cenargen.embrapa.br Seg primer: M13 Forward
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
Matches:
Conservative:
Mismatches:
                                                                                  burmannicoides
                                                                                                                   burmannicoides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Felipe Rodrigues da Silva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-723-947-77 (1-187) x DN238319 (1-689)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                          DN238319.1 GI:70795613
                                                                                     Musa acuminata subsp.
                                                                                                             Musa acuminata subsp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4.416-11
219.00
41.7%
31.2%
20.9%
                                                                                                                                                                                                                              (bases 1 to 689)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                      Musa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alignment Scores:
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
PUBMED
COMMENT
                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                           TITLE
```

g ò а õ g ò g ò d ò g ò g

```
Life Technologies (a division of Invitrogen) members carried out full-length librairies construction: Temple G. Genoscope members carried out sequencing and annotation: Castelli Schachter V., Mury J.M., Jaillon O., Wincker P., Menard M., Cruaud C., Schachter V., Waissenbach J., Salanoubat M.

URGV INRA: Clepet C., Caboche M.
Annotation is based on the June 2003 version of the Arabidopsis genome released by MIPS (Munich Information center for Protein Sequences). 5 prime and 3 prime are assembled with Phrap.

http://www.genoscope.cns.fi/externe/sequences/Banque_Projet_EF/Full
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MetAlaHisLeuValGlnProProAlaArgAlaHisIleValProPheTyrGlyGlyAla 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    137 ProAlaHisTyrProThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLys 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ArglysArgArgArgTyrAsplysGlnIleArgTyrGluSerArgLysAlaTyrAlaGlu 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             --ArgArgThrTrpThrArgProPheHisGlu 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  :::||| ::::::::::::::|| CGGCTTATTGATTCGTTCATCATCATCATCAAACAACGCCGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          698 IGCTICGAIATIGAITICIGCAGAICAAAGCICICIGCTITICACTIACCCTICICAAICA
                                                                                                                                                                                                                                 http://www.genoscope.cns.fr/cgi-bin/ggb/ggb?source=Arabidopsis.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GlnLeuCysGluTyrGlnPhePheAlaHisGlyAsnHisHisHisHisHisHisGlySer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -----ProProProPspAsnPheAspHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----GTAGTTCCT-----GACGGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              863 GGTGATCATCAAGCGAGCTCTATGGATAGAGAAGCTAGGGTTTTGAGGTACAGAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ThralaalaalaalyasnSerSerargLeuThrLeuGluValGlyAlaGlyGlyGlnHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTCAGCCACAGTGTTTCGACTTCT----TCTATTGAATACGGT------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  117 PheThrAsnThrIleSerAsnGluAlaIleMetThrIleAspThrGluMetMetValGly
                                                                                                                                                                                                                                                                                                                                                    /clone="GSLTPGH42ZH02"
| Cissue_type="Hormone Treated Callus"
|ecotype="Col-0"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1305
26
26
49
40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                   organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LeuArgProArgValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTACGGCCAAGGATCAAAGGCCGGTTTGCGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                               /plasmid="pCMVSPORT_6"
                                                                                                                                                                                                                                                                                                                       /mol_type="mRNA"
/db_xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'gene="At5g57660"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-723-947-77 (1-187) x CNS09ZOO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3.91e-10
213.00
48.0%
32.7%
20.3%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         52 AlaAlaAspTyrProVal-
                                                                                                                                                                                                                                                                                                                                                                                                                                                        .1305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ..
No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 4
CV291360
                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CNSO9ZOO 1305 bp mRNA linear HTC 06-FEB-2004 thabidopsis thaliana Full-length CDNA Complete sequence from clone GSLTPGH42ZH02 of Hormone Treated Callus of strain col-0 of Arabidopsis thaliana (thale cress).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Castelli, V., Aury, J.M., Jaillon, O., Wincker, P., Clepet, C., Menard, M., Cruaud, C., Quetier, F., Scarpelli, C., Schachter, V., Temple, G., Caboche, M., Weissenbach, J. and Salanoubach, M. Whole Genome Sequence Comparisons and 'Full-Length' cDNA Sequences: A Combined Approach to Evaluate and Improve Arabidopsis Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               491
                        .23 AACCGCGCGATCCCGACGATGTTCAGCGAGCCGATGCGCGGCCCCGAAGCGCTGCATGAG 182
                                                                                                                                                                                                             183 Trccagricificaccaccaccaccaccaccaccaccarcarcaaccaaaccar 242
                                                                                                                                                                                                                                                                                                   ----CAC 266
                                                                                                                                                                                                                                                                                                                                                                                 267 GCGCCGCCCCCCGAGCTTCAAGTATCTTGATGCCTGGGTGATGCTTGTGACCCCGGC 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                     93 GlyGlyGlnHisMetAlaHisLeuValGlnProProAlaArgAlaHisIleValProPhe 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TyrGlyGlyAlaPheThrAsnThrIleSer-----AsnGluAlaIleMetThrIle 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AspThrGluMetMetValGlyProAlaHisTyrProThrMetGlnGluArgAlaAlaLys 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ValMetArgTyrArgGluLysArgLysArgArgArgTyrAspLysGlnIleArgTyrGlu 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Magnoliophyta, eudicotyledons, core eudicotyledons, rosids, eurosids II; Brassicales, Brassicaceae, Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (18-NOV-2003) Genoscope - Centre National de Seguencage
BP 191 91006 EVRY cedex - FRANCE (E-mail : segref@genoscope.cns.fr
    16
                                                                                                                                                                        55
                                                                                                                                                                                                                                                                                                                                           ---- 81
                                                                               ---MetValSerProlleHisHisHisHisHisHisGlnGluHisGlnLeuCysGlu 35
                                                                                                                                                                                                                                                     56 ProValProProProAspAsnPheAspHisArgArgThrTrpThrArgProPheHis 75
                                                                                                                                                                                                                                                                                                                                                                                                                         -----AsnSerSerArgLeuThrLeuGluValGlyAla 92
                                                                                                                                                                   36 TyrGlnPhePheAlaHisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            444 TCGGCCACATTCACGGACGCTTCAAGTGGGAGCAACAAGGAGGCT-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCAAGGAAGGCGTACGCTGAGATGAAGCCGAAGATAAAAGGGCGGTTCGCCAAG 662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SerArgLysAlaTyrAlaGluLeuArgProArgValAsnGlyArgPheValLys
                                                                                                                                                                                                                                                                                        ---GTGCCGCCGGAGGAGAGC-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sequences are based on single pass reads
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BX831971.1 GI:42456656
TTC, GSLT. CDNA.
Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Web : www.genoscope.cns.fr)
                                                                                                                                                                                                                                                                                                                                       76 GluThrAlaAlaAlaGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 1305)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 1305)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Annotation
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              senoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The
                                          63
                                                                                    11
                                                                                                                                                                                                                                                                                             243
                                                                                                                                                                                                                                                                                                                                                                                                                           82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CNS 0 9 ZOO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
```

a

ò

ద

ò

a

ò

요

ઠે

637

697

99

757

96

796

136 862

	DRYSO21/C DRYSO621 BDRYSO621 48-L020593-065-004-H06-SeLB MPIZ-ADIS-065d Arabidopsis thaliana ACCESSION BRYSO621. ARABIdOPSIS thaliana (thale cress) SOURCE BRY SOURCE AUTHOR AUTHOR AUTHOR AUTHOR ALZ-ARES, J. Valencia, A., Costantino, P., Vittorioso, P., Davies, B., Gilbaseal to 615) Arabidopsis thaliana (thale cress) Arabidopsis thaliana AUTHOR AUTHOR AUTHOR AZ-ARES, J., Valencia, A., Costantino, P., Vittorioso, P., Davies, B., Gilbaseal, M., Martin, C., Angenett, G. C., Baeumlein, H., Mock, H. P., Coupland, G., Martin, C., Angenett, G. C., Baeumlein, H., Mock, H. P., Louge-Laser, A., Valencia, A., Contantino, P., Vittorioso, P., Davies, B., Gurbonero, P., Colombo, L., Tonelli, C., Engetroem, P., Sandsich, I., Walsshar, B. and Traas, J., Sandsich, I., Walsshar, B. and Traas, J. TITLE REGIA, an EU project on functional genomics of transcription factorer from Arabidopsis thaliana genomics of transcription JOURNAL Comp. Funct. Genomics 3 (2), 102-108 (2002) Comp. Funct. Genomics 3 (2), 102-108 (2002) Compact. Endomics 23 (2), 102-108 (2002) Miversitaetsstrases 25, D-31594 Bielefeld, Germany University, Institute for Genome Research Universitaetsstrases 25, D-31594 Bielefeld, Germany University, Markonic and Complement and physiological Data analysis performed in the frame of REGULATORS (Exploiting Inter-species conservation in promocer sequences to identify regulators of reproductive development and physiological Data analysis performed on the frame of REGULATORS (Exploiting Inter-species conservation in promocer sequences to identify regulators of reproductive development and physiological Data analysis performed on the frame of REGULATORS (Exploiting Haranau (IRB-Orsay UMR 1NRA-CNRS-URNS-URNS-URNS-URNS-URNS-URNS-URNS-U
D CY	DR.5062 DR.5062 DR.5063 DEFINIT ACCESSI VERSION KEYWORD SOURCE ORGAN AUTHO TITLE JOURN COMMENT
DEFINITION actol-5ms1-bo4 Actol Asparagus officinalis cDNA clone actol-5ms1-bo4 Actol Asparagus officinalis cDNA clone actol-5ms1-bo4 5', mRNA sequence. CV291360 CV20160 CV201	cores: similarity: similarity: 47-77 (1-1 6 GlyLeuC 2 GGCCAAA 26 HisHisH 62 GGCCAAG 62 GGCCAGG 64 HisHisH 64 HisHisH 66 HisArgA

```
157 ArglysArgArgArgTyrAspLysGlnIleArgTyrGluSerArgLysAlaTyrAlaGlu 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             137 ProAlaHisTyrProThrMetGlnGluArgAlaAlaLy8ValMetArgTyrArgGluLys 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              317 GGTGATCATCAAGCGAGCTCTATGGATAGAGAAACTAGGGTTTTGAGGTACAGAGAGAAG 258
                        502 CGGCTTATTGATTTCGAGTTTCCGAATTCGTTCAATCATCATCAAAACAACGCCGGAGGA 543
                                                                                                                                  97 MetAlaHisLeuValGlnProProAlaArgAlaHisIleValProPheTyrGlyGlyAla 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          117 PheThrasnThrIleSerAsnGluAlaIleMetThrIleAspThrGluMetMetValGly 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----GTAGTTCCT----GACGGAAAC 366
                                                                           ----ProProProAspAsnPheAspHis 66
                                                                                                                                                                                            77 ThrAlaAlaAlaGlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHis 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      365 ACAAACAACTCTGTTAACCGGAGCACGATC-----ACTAGCTCGACGACTGGT
                                                                                                                                                                                                                                                                                                                                             122 GTCAGCCACAGTGTTTCGACTTCT----TCTATTGAATACGGT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       197 TCACGGCCAAGGATCAAAGGCCGGTTTGCGAAA 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    177 LeuArgProArgValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Arabidopsis thaliana (thale cress)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CUNA 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Jong Chan Hong
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DN604709.1 GI:61656006
                                                                        52 AlaAlaAspTyrProVal--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished (2005)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      383 -----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Korea
                                                                                                                                                                                            67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 6
DN604709/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                        8
                                                                                                                               g
                                                                                                                                                                                         ð
                                                                                                                                                                                                                                            원
                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ଚ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
lecharmy-ad-ibp.u-psud.fr).

Definition of the terms used to describe the quality of the clone: The about 250 sequences. From the clone collection were sorted according to clones and clustered. If more than one contig was formed, the clone was designated 'Contamination'. The contigs and singletons were blasted against CDS plus pseudogenes from the TIGRYS annotation, and matches longer than 50 bp with 95 percent identity are reported as 'intron found'. The remaining terms for Seqhalysis describe the outcome of the evaluation of the CDS detected after pairwise alignment with CDS plus pseudogenes from the TIGRYS annotation file. The sequences or contigs for which a full CDS with or without STOP codon was detected, a BLASTP against all TIGRYS procein sequences was performed Pull perfect: 100 percent identity; full good: better than 95 percent identity over more than 95 percent of the sequence; partial good: better than 95 percent identity were less than 95 percent identity were less than 95 percent of the sequence; weak similarity: less than 95 percent identity over less than 95 percent of the sequence; on that the collection contains a few clones for which sequencing was not successful, which could have simple technical reasons.

Obviously, information about these clones is missing in the tracer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /dab host="E. coli DH5alpha"
/clone lib="MPIZ-ADIS-065d"
/clone lib="MPIZ-ADIS-065d"
/clone="Westerner powrsol; in the context of the EU-funded project REGIA (GL6-CT11999-00876, coordinator Javier Paz-Ares), a set of transcription factor ORFs was generated. The ORFs were produced in a decentralized way in the labs of the participants. Most of the ORFs were generated by RT-PCR using cDNA from various A. thaliana tissues as a template. Initially, it was planned to use yeast recombination to move the ORFs from the cloning vectors into target constructs. For this reason, a number of the clones contein 'REGIA tags' (RG tag1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            project, the GATEWAY system became available and finally all ORFs were transferred into GATEWAY vectors. At the end of the REGIA project, the clones were collected as plasmid DNA. For end-sequencing at the DNA core facility of the MPI of Plant Breeding Research (ADIS; head: Bernd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Weisshaar), the plasmids were re-transformed into DHSalpha, arrayed into 96-well plates and new plasmid DNA was prepared. Re-transformation proved to be difficult because a number of clones displayed poor growth. Data submission has been handled by GabiPD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Insert Length: 815 Std Error: 0.00
Seq primer: SelB GTAACATCAGAGATTTTGAGACAC.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /mol_type="mRNA"
/ecotype="Columbia"
/db_xref="GABI:1451429"
/db_xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (http://gabi.rzpd.de)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'clone="004-H06"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
```

DN604709 817 bp mRNA linear EST 18-MAR-2005 JCAt5957660 Arabidopsis Gateway CDNA Library Arabidopsis thaliana Arabidopsis thaliana Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons; core utrosids II; Brassicales; Brassicaceae; Arabidopsis.
1 (bases 1 to 817)
Lim,C.J., Yang,K.A., Hong,J.K., Choi,J.S., Yun,D.-J., Hong,J.C., Choi,J.S., Yun,D.-J., Hong,J.C., Ghoi,M.J. and Lim,C.O.
Gene expression profiles during heat acclimation in Arabidopsis suspension culture cells Biochemistry Department, 900 Gazwa-dong, Jinju, Gyeongnam 660-701, /db_xref="taxon.3702"
/lab_host="R. coli"
/clone_lib="Arabidopsis Gateway CDNA Library"
/note="Vector: pDONR201; To clone DNA sequences for functional analysis and expression in multiple systems" Gyeongsang National University 900 Gazwa-dong, Jinju, Gyeongnam 660-701, Korea Tel: 82 55 751 5960 Fax: 82 55 752 7062 organism="Arabidopsis thaliana" Email: jchong@ganu.ac.kr
Seq primer: TCGCGTTAACGCTAGCATGGATCTC. Location/Qualifiers /mol_type="mRNA" /ecotype="Columbia" . . 817 source FEATURES

> US-10-723-947-77 (1-187) x DR750621 32

ઠે

815 26 50 50 6

Conservative: Mismatches: Indels:

Percent Similarity:
Best Local Similarity:
Query Match:
DB:

Score:

Matches: Length:

8.17e-10 207.00 47.4% 32.2% 19.8% GlnLeuCysGluTyrGlnPhePheAlaHisGlyAsnHisHisHisHisHisHisGlySer 51 .. =

ORIGIN

FEATURES 1. 829 1. 829 1. 829 1. 829 Arabidopsis thaliana" mol_type="mRNA" cotype="Columbia" dev_etage="Plant 3" weeks old, three days post infection" dev_etage="Plant 3" weeks old, three days post infection" clone lib="Infected Arabidopsis Leaf" note="Organ: Leaf; Vector: pBluescript; Mixed cDNA library of Arabidopsis and E. cichoracearum infected from three weeks old Arabidopsis plants. Plants were harvested 3 days after infection and mRNA oligo dT selected."	Alignment Scores: 8.35e-10 Length: 829 Pred. No.: 207.00 Matches: 55 Score: 207.00 Matches: 55 Percent Similarity: 47.4\$ Conservative: 26 Best Local Similarity: 47.4\$ Mismatches: 50 Query Match: 59.8\$ Indels: 40 DB: 50.00 Matches: 50 Cuery Match: 50.00 Mismatches: 50 Cuery Mismatches: 50.00 Mismatches: 50 Cuery Mismatches: 50.00 Mismatches: 50 Cuery Mismatches: 50.00 Mismatch	Qy 32 GlnLeuCysGluTyrGlnPhePheAlaHisGlyAsnHisHisHisHisHisHisGlySer 51 1::::::: 288 CGGCTTATTGATTTCCGAATTCCTTCAATCATCATCAAAACAACGCCGGAGGA 347 Qy 52 AlaAlaAspTyrProVal Db 348 GATAGTCTTGTTCCGGTTCAGACGAAACAGAGCCTCTCCCGTTAACTAAC	408 TGCTTCGATATTGATTTCTGCAGATCAAAGCTCTCTGCTTTCACTTACCCTTCTCAATCA 46 77 ThralaalaalaalaglyasnSerSerArgLeuThrLeuGluValGlyalaGlyGlnHis 96 11.	Db 525 ACAAACAGCTCTGTTAACCGGAGCACGATCACTAGCTCGACGACGATCGT 572	RESULT 8 CNSO9ZSB CNSO9ZSB LOCUS LOCUS DEFINITION Arabidopsis thaliana Full-length cDNA Complete sequence from clone GSLTPGH1ZB11 of Hormone Treated Callus of strain col-0 of Arabidopsis thaliana (thale cress). ACCESSION BA331501. VERSION BX931501.1 G1:42456535 KEYWORDS HTC; GSLT_cDNA. SOURCE Arabidopsis thaliana (thale cress) ORGANISM Arabidopsis thaliana Enkaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Alignment Scores:	TProval TCCGGTTCAGACGAAACA TCTGGTTCAGACGAAACA TGATTTCTGCAGATCAAAG	346 97 307 117 289	137 ProAlaHisTyrProThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLys 156		REFERENCE 1 (bases 1 to 829) AUTHORS Lundsgaard,M., Emmersen,J., Nielsen,K.L., Wilson,I., Somerville,S. and Welinder,K.G. TITLE EST sequencing of Erysiphe cichoracearum infected Arabidopsis plants JOURNAL Contact: Karen G. Welinder COMMENT Institut for bioteknologi Alborg Universitet Sobngaardsholmsvej 49, 9000 Aalborg, Denmark Tel: 445 96358467 Fax: 445 98141808 Fax: 445 98141808 Email: kgw@bio.auc.dk.

ò g ò g ò 셤 ઠે g ò d ઠે g ò 셤 ò 유

```
High quality sequence stop: 563.

Location/Qualifiers
Location/Qualifiers

Location/Qualifiers

location/Qualifiers

/ organism="Vitis vinifera"
/ docation="RANA"
/ db_xref="laxon: 29760"
/ clone="VV0132B12"
/ tissue type="herrits"
/ tissue type="herrits"
/ tissue type="herrits"
/ clone=lib="An expressed sequence tag database for abiotic stressed berries of Vitis vinifera var. Chardonnay"
/ note="Vector: lambda Uni-Zap XR, Bluescript SK-; Site_1:
ECORI; Site_2: Xho!"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EST 02-MAY-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GluValGlyAla------GlyGlyGlnHisMetAlaHisLeuValGlnProProAla 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              106 ArgAlaHisIleValProPheTyrGlyGlyAlaPheThrAsnThrIleSerAsnGluAla 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    300 ATGAAGCAAGTGAGCGGAGGCGGCGGCGGTTCTACTGGAGTCAAGCGACCCAATTA 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 146 ArgAlaAjaLysValMetArgTyrArgGluLysArgLysArgArgArgArgTyrAspLysGln 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Vitis vinifera
Vitis vinifera
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               126 IleMetThrIleAspThrGluMetMetValGlyProAlaHisTyrProThrMetGlnGlu 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IleArgTyrGluSerArgLysAlaTyrAlaGluLeuArgProArgValAsnGlyArgPhe 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----TCTGGAATGGAT 371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     431
                                                                                                                                                                                                                                                                                                                                                                                                                                   22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VVB072E11 334194 An expressed sequence tag database for abiotic stressed leaves of Vitis vinifera var. Chardonnay Vitis vinifera CDOM clone VVB072E11 5, mRNA sequence. CD007533.1 GI:30324271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ThrTrpThrArgProPheHisGluThrAlaAlaAlaGlyAsnSerSerArgLeuThrLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240 GATGTTGGGGTTGTCCCAGATGGGAACTGCAACTCCATGTCTGATACATCCTACCTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ---PheAspHisArgArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                           563
21
53
34
53
                                                                                                                                                                                                                                                                           Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     56 ProValProPro------ProProAspAsn---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                   HighighighighighlySerAlaAlaAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          596 bp
                                                                                                                                                                                                                                                                                                                                                                                                 US-10-723-947-77 (1-187) x CB911506 (1-563)
                                                                                                                                                                                                                                                                         7.91e-10
205.00
46.3%
33.3%
19.6%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   360 -----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        186 ValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          497
                                                                                                                                                                                                                                                                                                                           Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CD007533
                                                                                                                                                                                                                                                                                                           Percent Similarity:
                                                                                                                                                                                                                                                            Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                   44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 11
CD007533
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                     FEATURES
                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      dd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CB911506 563 bp mRNA linear EST 25-APR-2003 VVD132B12 372903 An expressed sequence tag database for abiotic stressed Berries of Vitis vinifera var. Chardonnay Vitis vinifera CBNA clone VVD132B12 5, mRNA sequence.
                                                                                                                                        643
                                                                                                                                                                                                        04 IGCTICGATATIGATITCTGCAGATCAAAGCTCTCTGCTTTCACTTACCCTTCTCAATCA 763
                                                                                                                                                                                                                                                                                                                                                                               97 MetAlaHisLeuValGlnProProAlaArgAlaHisIleValProPheTyrGlyGlyAla 116
                                                                                                                                                                                                                                                                                                                                                                                                     :::|||||||
-----GACGGAAAC 820
                                                                                                                                                                                                                                                                                                                                                                                                                                                 117 PheThrAsnThrIleSerAsnGluAlaIleMetThrIleAspThrGluMetMetValGly 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      137 ProAlaHisTyrProThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLys 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      869 GGTGATCAAGCGAGCTCTATGGATÁGÁGAAGCTAGGGÍTTTGÁGGTACAGAGAGAG 928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        157 ArgLysArgArgArgTyrAspLysGlnIleArgTyrGluSerArgLysAlaTyrAlaGlu 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Magnoliophyta, eudicotyledons, core eudicotyledons, rosids, Vitaceae, Vitis.
(bases 1 to 563)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                        99
                                                                                                                                                                                                                                                                                                         77 ThrAlaAlaAlaGlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHis 96
                                                                                                        21
                                                                                                                                                                                                                                          ---ArgArgThrTrpThrArgProPheHisGlu 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           An expressed sequence tag database for abiotic stressed berries Viiis vinifera var. Chardonnay Unpublished (2002)
                                                                                                                        GlnLeuCysGluTyrGlnPhePheAlaHisGlyAsnHisHisHisHisHisGlySer
                                                                                                                                                                        ----ProProProAspAsnPheAspHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    821 ACAAACAACTCTGTTAACCGGAGCACGATC------ACTAGCTCGACGACTGGT
                                                                                                                                                                                                                                                                                                                                  50
40
6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                989 TCACGCCCAAGGATCAAAGGCCGGTTTGCGAAA 1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          177 LeuArgProArgValAsnGlyArgPheValLys 187
   Mismatches:
Indels:
                                     Gaps:
                                                                    US-10-723-947-77 (1-187) x CNS09YN5 (1-1335)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BACKWARD: T7_21mer (backward)
Plate: 132 row: B column: 12
Seg primer: T3 20mer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MS200, Reno, NV 89557-0014,
Tel: 775-784-1918
                                                                                                                                                                      52 AlaAlaAspTyrProVal-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Department of Biochemistry
University of Nevada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  jcushman@unr.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CB911506.1 GI:30126167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Cushman JC
   32.2%
19.8%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FORWARD: T3 20mer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Vitis vinifera
Vitis vinifera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PCR PRimers
 Similarity:
                                                                                                      32
                                                                                                                                                                                                                                          67
                                                                                                                                                                                                                                                                                                                                                                                                               303
Best Local Sis
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CB911506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
```

g

Qy 166 IleArgTyrGluSerArgLyshlaTyrAlaGluLeuArgProArgValAsnGlyArgPhe 185 Db 493 ATCAGATACGCCTCCAGAAAAGCCTACGCCGAGACGCGTCCAAGAATCAGAGCCGTTTC 552 Qy 186 ValLys 187 Db 553 GCAAAG 558 RESULT 12 CD010195 LOCUS CD010195 LOCUS CD010195 DFFINITION VVBL04H08 341909 An expressed sequence tag database for abictic	stressed leaves of Vitis vinifera var. Chardonnay Vitis CDNA clone VVB104H08 5, mRNA sequence. CD010195 CD010195.1 GI:30326933 EST. Vitis vinifera Vitis Camer, G.R. and Cushman, J.C. An expressed sequence tag database for abiotic stressed Vitis vinifera var. Chardonnay Unpublished (2002) Contact: Cushman JC Department of Blochemistry University of Nevada MS200, Revo, NV 89557-0014, USA	FEATURES Hat 100/00/01/10/10/10/10/10/10/10/10/10/10/		ORIGIN Alignment Scores: Pred. No.: Score: 205.00 Matches: 54 Percent Similarity: 46.3\$ Conservative: 21 Best Local Similarity: 33.3\$ Indels: 53 Query Match: 66 Gaps: 5	US-10-723-947-77 (1-187) x CD010195 (1-631) QY
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicotyledons; rosids; Vitaceae; Vitis. REFERENCE 1 (bases 1 to 596) AUTHORS Cramer, G.R. and Cushman, J.C. TITLE An expressed sequence tag database for abiotic stressed leaves of Vitis vinifera var. Chardonnay JOURNAL Contact: Cushman JC COMMENT Contact: Cushman JC Department of Biochemistry University of Nevada MS200, Reno, NV 89557-0014, USA Tel: 775-784-1918 Fax: 775-784-1650	Email: jcushman@unr.edu PCR PRimers FORWARD: T7 21mer (backward) Plate: 0 row; E column: 11 Seq primer: T3 20mer High quality sequence stop: 596. High quality sequence stop: 596. Location/Qualifiers 1. 596 vorganism="Witis vinifera" vo	ORIGIN Alignment Scores: Rocal No.: Scoret Similarity: Best Local Similarity: 19.6\$ Indels: Conservative: Conservative	-10-723-947-77 (1-187) x CD007533 (1-596) 44 HisHisHisHisHisHisGlySerAlaAlaAspTyr	Oy 1nrTrpInrArgProPheHisGluThrAlaAlaAlaAgasserSerArgLeuUnrLeu 88 ::	126 IleMetThrIleAspThrGluMetMetValGlyProhlaHisTyrProThrMetGlnGlu

BCORI; Site_2: XhoI; Library construction was performed according to Stratagene's recommended protocol for the Lambda UnizapXR vector and cDNA synthesis kit." Alignment Scores: Pred. No.: Score: Score: Score: Score: Score: Score: A6.34 Mismatches: Best Local Similarity: 33.34 Mismatches: Duery Match: Best Local Similarity: 19.64 Indels:	-10-723-947-77 (1-187) x CD010575 (1-650) 44 HisHisHisHisHisGlySerAlaAlaAspTyr	Db 241 TCAAAGCTCTCTGCCTACAACTATACCAGCTCTAAGCCAAAGCATTTCATCTTCA 300 Qy 89 GluValGlyAlaGlyGlyGlnHisMetAlaHisLeuValGlnProProAla 105 :::	Oy 146 ArgAlaAlaLysValMetArgTyTArgGluLysArgLysArgArgArgArgArgArgArgArgArgArgArgArgArgA	stressed Teaves of Viris vinifera var. Chardonnay Vitis CDNA clone VVA003D01 5, mRNA sequence. BM436387 BM436387.1 GI:18458109 BST. Vitis vinifera Vitis vinifera Vitis vinifera Vitis vinifera I (bases I to 712) Cramer,G.R. and Cushman,J.C. An expressed sequence tag database for abiotic stressed Vitis vinifera var. Chardonnay Upublished (2002) Contact: Cushman JC Department of Biochemistry University of Nevada
Db 181 CCCTCACCTCCGGTCACGAACCACCTGCTGACAATTGTTTGAACTGGATTTCTCTCTC	Db 361 ATGAAGCAAGTGAGCGGAGGCGGCGCGTTCTACTGGGACCCAATTA 420 Qy 126 IleMetThrIleAspThrGluMetMetValGlyProAlaHisTyrProThrMetGlnGlu 145 Db ::: :::	Qy 186 VallLys 187 Db 553 GCAAAG 558 RESULT 13 650 bp mRNA linear EST 02-MAY-2003 LOCUS CD010575 DEFINITION VVB13D03 342669 An expressed sequence tag database for abjotic stressed leaves of Vitis vinifera var. Chardonnay Vitis vinifera cDNA clone VVB13D03 5, mRNA sequence. ACCESSION CD010575 G1:30327313 VERSION CD010575.1 G1:30327313	-	Email: jcushman@unr.edu PCR PR.haners FORWARD: T3 20mer Plate: 1 row: D column: 03 Seq primer: T3 20mer Location/Qualifiers I. 650. High quality sequence stop: 650. Appe="mark" / 40

```
546 bp DNA linear GSS 26-JUL-2005.

OC Ba0151B03.f OC Ba Oryza coarctata genomic clone OC Ba0151B03

57 genomic survey Requence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone_lib="OC_Ba"
/note="Vector: pAGIBAC1; Site_1: HindIII; Site_2: HindIII"
                                                                                                                                                                    Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Ehrhartoideae; Oryzeae; Oryza.

1 (Bases 1 to 546)
Kim, H., Collura, K., Wissotski, M., Byrne, M., Stum, D., Smart, D., Rao, K., Luo, M., Jetty, R., Kudrna, D., Muller, C., Soderlund, C. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GlyAlaGlyGlyGlnHisMetAlaHisLeuValGlnProProAlaArgAlaHisIle-Va 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            110 lproPheTyrGlyGlyAlaPheThrAsnThrIleSerAsnGluAlaIleMetThrIleAs 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      130 pThrGluMetMetValGlyProAlaHisTyrProThrMetGlnGluArgAlaAlaLysVa 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                150 lMetArgTyrArgGluLysArgLysArgArgArgTyrAspLysGlnIleArgTyrGluSe 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  362 GCCATTCTCGGGGAGCACACTTGAAGGCACTTTG---AACGATAGCAACAGAGAGGTTGG
                                                                                                                                                                                                                                                                                                        OMAP (Oryza Map Alignment Project) - Arizona Genomics Institute Unpublished (2005)
Contact: Rod A. Wing Arizona Genomics Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          305 GGAAGGCATGACGGCCGGCCGAGGT----GACCTGGCAATGGAGAGGAAGCCAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    170 rArgiysAlaTyrAlaGluLeuArgProArgValAsnGlyArgPheValiys 187
                                                                                                                                                                                                                                                                                                                                                                                  University of Arizona
Forbes Building Room 303, Tucson, AZ 85721-0036,
Tel: 520 626 9595
Fax: 520 621 1259
                                                                                                                                    Oryza coarctata (Porteresia coarctata)
Oryza coarctata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
1. 546
/organism="Oryza coarctata"
/mol_type="genomic DNA"
/db xref="taxon:77588"
/clone="OC_Ba0151803"
/tissue_type="leaves"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FORWARD: TAA TAC GAC TCA CTA ȚAG GG
BACKWARD: CAC TCA TTA GGC ACC CCA
PLAte: 0151 row: B column: 03
Seg primer: TAA TAC GAC TCA TAG
Class: BAC ends.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: rwing@genome.arizona.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-723-947-77 (1-187) x CZ787328 (1-546)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        dev stage="mature"
lab_host="DH108".
                                                                                              CZ787328.1 GI:71227181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        392 ĠĠĠĠŔĠĠĊĠĠĊ-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8.51e-10
204.50
59.2%
48.0%
19.5%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Percent Similarity:
                                                                                                                                                                                                                                                                                          Wing, R.
OMAP (C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  91
                                                                        ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                      LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No.:
    22787328/c
                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              유,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                tag database for abiotic var. Chardonnay"
                                                                                                                                                                                                                                                                                                                                                              stressed leaves of Vitis vinitera var. Chardonay. Incte="Vector: Lambda Uni-Zap XR, Bluescript SK-; Site 1: EcoR1; Site_2: Xhol; Library construction was performed according to Strategene's recommended protocol for the Lambda UniZapXR vector and cDNA synthesis kit."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  89 GluValGlyAla-----GlyGlyGlnHisMetAlaHisLeuValGlnProProAla 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      106 ArgAlaHisIleValProPheTyrGlyGlyAlaPheThrAsnThrIleSerAsnGluAla 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        126 IleMetThrileAspThrGluMetMetValGlyProAlaHisTyrProThrMetGlnGlu 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    146 ArgAlaAlaLysValMetArgTyrArgGluLysArgLysArgArgTyrAspLysGln 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        544 CGCGAAGCGAGGCTCTTCAGGTACAGAGAAGAAGAAGAACCGGAAATTCGAGAAAACC 603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          292 CCCTCACCTCCGGTCACGAACCACCCTGACAATTGTTTTGAACTGGATTTCTCTCGA 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          352 TCAAAGCTCTCTGCCTACAACTATACAGCTCAATCTCTAAGCCAAAGCATTTCATCTTCA 411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        69 ThrTrpThrArgProPheHisGluThrAlaAlaAlaGlyAsnSerSerArgLeuThrLeu 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGAAGCAAGTGAGCGGAGGCGGCGGCGGTTCTACTGGGAGTCAAGCGACCCAATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            166 IleArgTyrGluSerArgLysAlaTyrAlaGluLeuArgProArgValAsnGlyArgPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----TCTGGAATGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          712
54
53
53
53
                                                                                                                                                                                                                                                                                                                            /dev_stage="juvenile and adult"
/clone_lib="An expressed sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HisHisHisHisHisHisGlySerAlaAlaAsp
                                                                                                                                                                                                                              /organism="Vitis vinifera"
                                                                                        FORWARD: T3 20mer
BACKWARD: T7 21mer
Plate: 003 row: D column: 01
Seq primer: T3 20mer
High quality sequence stop: 712.

e 1. 712
  NV 89557-0014, USA
                                                                                                                                                                                                                                                  /mol_type="mRNA"
/db_xref="taxon:29760"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-723-947-77 (1-187) x BM436387 (1-712)
                                                                                                                                                                                                                                                                                                            tissue_type="leaf"
                                                                                                                                                                                                                                                                                    /clone="VVA003D01
                                                          Email: jcushman@unr.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1.07e-09
205.00
46.3%
33.3%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ProValProPro-----
                Tel: 775-784-1918
Fax: 775-784-1650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAAAG 669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          186 ValLys 187
                                                                          PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                664
                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15
                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DRIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

ဗ္ဗ

192

.-----36TCCGGTGCCACCTTCAT 363

546 111 26 14 3

Length:
Matches:
Conservative:
Mismatches:
Indels:

Search completed: February 23, 2006, 11:40:49 Job time : 3670 secs

Ade19584 One grain Ade19589 Winter ba Ade19589 Winter ba Ade19589 Winter ba Ade19589 Winter ba Ade19580 Langdon (Ade16788 Lidd-rela Ade16788 Lidd-rela Ade16788 Lidd-rela Ade16788 Lidd-rela Ade16789 Arabidops Ade1678 Arabidops Ade1678 Plant ful Ade1678 Arabidops Ade1678 Lidd-rela Ade16782 Lidd-rela Ade16782 Lidd-rela Ade16782 Lidd-rela Ade16782 Lidd-rela Ade16782 Lidd-rela Ade16792 Plant ful Ade16792 Plant cob Ade18999 Plant cob Ade1899 Plant cob

ADX51649 ADS16785

AEB65256

ADW16414

ADJ39390

ADX31789

ADX45392

ADW16807

ADS16780 ADN72948

ABN98249

Sequence:

ADS16783

```
One grained wheat, chromosome 5a; se; APETALA1; AP1; vernalisation; flowering; ZCCT1; ZCCT2; vrn1; vrn2; CArG box; plant; gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dubcovsky J, Yan L, Loukoianov A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            One grained wheat DV92 ZCCT1 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADS19577 standard; cDNA; 996 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26-NOV-2003; 2003US-00723947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11-APR-2003; 2003US-00412137.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30-DEC-2004 (first entry)
                                                                                                                                                                                                                                      1404
1703
1122
1388
1728
1728
1385
2723
1101
                                        2913
1985
2043
5734
1078
11078
11078
11297
1374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Triticum monococcum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2004-728059/71
US2004205848-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (REGC ) UNIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14-OCT-2004.
                                                                                                                                                                                                                                                    1999.5
198.5
198.5
198.5
188.5
188.5
188.5
188.5
188.5
188.7
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
188.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
189.5
            730.5
729.5
670.5
572.5
547.5
547.5
258
258
258
257
207
207
207
207
207
                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADS19577;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 1
ADS19577
 Ads19577 One grain
Ads19581 Langdon (
Ads19576 One grain
Ads19590 Winter ba
                                                                                                 ; Search time 490 Seconds
(without alignments)
2543.464 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                        1 MSMSCGLCGANNCPRLMVSP.....YESRKAYAELRPRVNGRFVK 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Description
            GenCore version 5.1.7 (c) 1993 - 2006 Biocceleration Ltd
                                                                                                                                                                                                                                                                                                                                            9993994
                                                                     using frame_plus_p2n model
                                                                                                                                                                                                                                                                                                                                         Fotal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                             4996997 segs, 3332346308 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUMMARIES
                                                                                                   February 23, 2006, 10:37:57
                                                                                                                                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADS19577
ADS19581
ADS19576
ADS19590
                                                                                                                                                                                                                                      0.5
7.0
7.0
                                                                                                                                                                                                                                      , Xgapext
, Ygapext
, Fgapext
, Delext
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            geneseqn2004as:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       geneseqn2004bs:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               genesegn2003cs:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   geneseqn2005s:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   geneseqn2001as:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    geneseqn2002as:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 geneseqn2003as:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              genesegn2003bs:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                geneseqn2002bs:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ΩĦ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          geneseqn1980s:*
geneseqn1990s:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             geneseqn2003ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   geneseqn2001bs:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       geneseqn2000s:*
                                                                                                                                                                                                                                                                                                                                                                       Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                         US-10-723-947-77
1048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13
13
13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Geneseq_21:*
                                                                                                                                                                                                                                   Xgapop 10.0,
Ygapop 10.0,
Fgapop 6.0,
Delop 6.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      996
975
7051
639
                                                                     nucleic search,
                           Copyright
                                                                                                                                                                                                                       BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Command line parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98.8
86.6
77.9
73.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score
                                                                                                                                                          Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1035
907.5
816
768.5
                                                                                                                                                                                                                       Scoring table:
                                                                       OM protein -
```

Database :

Result. ٥ ا

ALIGNMENTS

N

t

```
The invention relates to a recombinant ZCCT1 protein (Zn finger and CCT domain protein) coding sequence comprising a nucleic acid that hybridises to the barley ZCCT1 CDNA appearing as ADS19577. The patent also discloses the identification of to genes, vral identified as API (APETALA1) and cvar2 identified as ZCCT1 also has a duplicate gene ZCCT2, all three genes are consisted to chromosome Sa of one grained wheat, Triticum monococcum ZCCT1 is the repressor of API whose promoter contains a binding site for ZCCT1 termed the CArG box. Also included are a vector comprising the recombinant ZCCT1 protein comprising the recombinant CCC protein comprising the vector, a transgenic plant comprising the recombinant CCC ZCCT1 protein comprising the vector, a transgenic plant comprising the recombinant CCC ZCCT1 protein comprising the vector, a transgenic plant comprising the recombinant CCC ZCCT1 protein comprising the vector. A pransgenic plant comprising the vector attains a method for ZCCT1 protein comprising the vector attains and molecular marker for altering a plant's response to vernalisation and a molecular marker for Vrn2 derived from ADS19577. The genetic construct is an interference RNA construct that inhibits ZCCT1 activity and comprises an antiseñse construct that inhibits ZCCT1 activity and comprises an antiseñse construct that inhibits ZCCT1 activity and comprises an antiseñse construct acid sequence encoding a repression defective ZCCT1 protein operably linked to a promoter or a molecular marker for a repression defective ZCCT1 protein operably linked to a promoter or an antisefference and account of the protein construct in a construct or a molecular marker for a repression defective ZCCT1 activity and comprises an antiseñse construct that inhibits ZCCT1 activity and comprises an antiseñse construct that inhibits ZCCT1 activity and comprises an antiseñse construct that inhibits activity and comprise construct or a machod and a promoter or a machod and a promoter or a machod and a promoter or a machod and a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                quence encoding a DNA binding defective ZCCTl protein to a promoter. The present sequence is a plant ZCCT cDNA
                                                                             New recombinant ZCCT1 protein coding sequence useful for altering a plant's (e.g., wheat, barley, rye, oats, or forage grasses) response vernalization or flowering times.
                                                                                                                                                                                                                                           Claim 1; SEQ ID NO 75; 115pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          operably linked
```

Sequence 996 BP; 281 A; 273 C; 224 G; 218 T; 0 U; 0 Other;

```
169 ATTCACCATCATCACCATCATCACATCATCAGGAGCACCAGCTGTGTGAGTACCAGTTCTTCGCC
                                                                                                                                                                                                                                                               HisGlyAsnHisHisHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro
                                                                                                                                                                                                                                                                                CATGGCAACCACCACCACCACCACCACCATGGCTCGGCAGCAGACTACCCAGTGCCACGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                           ValGlnProProAlaArgAlaHisIleValProPheTyrGlyGlyAlaPheThrAsnThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro
                                                                                                                                                                                                     21 IleHisHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla
                                                                                                                                                                                                                                                                                                                         ProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAlaAla
                                                                                                                                                                                                                                                                                                                                                   ccagacaactricgaccaccecagaacargaaccagaccarrircargaaacagcagcgca
                                                                                                                                                                                                                                                                                                                                                                                  GlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlyGlnHisMetAlaHisLeu
                                                                                                                                                                                                                                                                                                                                                                                                      IleSerAsnGluAlaIleMetThrIleAspThrGluMetMetValGlyProAlaHisTyr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTAGCAATGAAGCAATCATGACTATTGACACAGAGATGATGGTGGGGGCCTGCCCATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ProThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLysArgLysArgArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGCAGCCACCGGCAAGAGCCCACATCGTGCCATTTCACGGAGGTGCATTCACCAACACT
             996
185
1
            Length:
Matches:
Conservative:
Mismatches:
                                                                Indels:
Gaps:
                                                                                                               US-10-723-947-77 (1-187) x ADS19577 (1-996)
         7.23e-86
1035.00
99.5%
98.9%
98.8%
                                                       Best Local Similarity:
                                         Percent Similarity:
Alignment Scores:
                                                                                                                                                                         109
                                                                                                                                                                                                                                                               41
                                                                                                                                                                                                                                                                                              229
                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                       289
                                                                                                                                                                                                                                                                                                                                                                                                                 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            529
                                                                                                                                                                                                                                                                                                                                                                                  81
                                                                                                                                                                                                                                                                                                                                                                                                                                            101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               141
                                                                   Query Match:
DB:
                                                                                                                                                                        유
                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                            ò
                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
```

348

100 408 120 468 140 528 160 588

228

9

40

20

288

80

BP; 276 A; 263 C; 218 G; 218 T; 0 U; 0 Other;

Sequence 975

Length: Matches: Conservative:

3.91e-74 907.50 91.4%

Percent Similarity:

Score:

```
The invention relates to a recombinant acting to the invention relates to a recombinant and administration of the barley ZCT1 cDNA appearing as ADS1957. The patent also discloses to the identification of to genes, vini identified as ADI (APETALAL) and vini identified as ZCT1 controlling vernalisation of flowering in temperate grasses. ZCT1 controlling vernalisation of flowering in temperate grasses. ZCT1 controlling vernalisation of flowering in temperate grasses. ZCT1 is the repressor of API whose promoter contains a monococcum. ZCT1 is the repressor of API whose promoter contains a binding site for ZCT1 termed the CARG box. Also included are a vector comprising the recombinant ZCT1 protein coding sequence above, a cell comprising the recombinant ZCT1 protein coding sequence above, a cell activity as genetic construct that inhibits ZCCT1 protein coding sequence above (or a genetic construct that inhibits ZCCT1 activity, and a molecular marker for vira derived from ADS19577. The genetic construct is an interference RNA construct that inhibits ZCCT1 activity, anucleic acid sequence encoding a plant ZCCT1 protein operably linked to a promoter or a nucleic acid sequence encoding a DNA binding defective ZCCT1 protein operably linked to a promoter. The present sequence is a plant ZCCT cDNA
                      161 ArgTyrAspLysGlnIleArgTyrGluSerArgLysAlaTyrAlaGluLeuArgProArg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New recombinant ZCCTl protein coding sequence useful for altering a plant's (e.g., wheat, barley, rye, oats, or forage grasses) response to vernalization or flowering times.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The invention relates to a recombinant ZCCT1 protein (Zn finger and CCT
                                                                                                                                                                                                                                                                                                                                               Wild emmer wheat; ss; APETALA1; API; vernalisation; flowering; ZCCT1; ZCCT2; vrn1; vrn2; CArG box; plant; gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure; SEQ ID NO 79; 115pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                              Triticum turgidum; subsp. dicoccoides.
                                                                                                                                                                                                                                                                                                          Langdon (tetrapolid) wheat ZCCT1 cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ä
                                                                       181 ValAsnGlyArgPheValLys 187
                                                                                                               649 Grchacgccccrrrcrchag 669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Loukoianov
                                                                                                                                                                                          ADS19581 standard; cDNA; 975 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26-NOV-2003; 2003US-00723947.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11-APR-2003; 2003US-00412137.
                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (REGC ) UNIV CALIFORNIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ù
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2004-728059/71.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Yan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P-PSDB; ADS19582
                                                                                                                                                                                                                                                                                                                                                                                                                                                  US2004205848-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dubcovsky J,
                                                                                                                                                                                                                                                                      30-DEC-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14-OCT-2004
                                                                                                                                                                                                                                 ADS19581;
                                                                                                                                                                        ADS1958:
                                                                                                                                                    RESULT
                                                                                                           q
                                                                                                                                                                                          셤
                                                                         ò
```

```
160
                                                                                                             327
                                                                                                                                                                                                                                                   100
                                                                                                                                                                                                                                                                         387
                                                                                                                                                                                                                                                                                                 ValGlnProProAlaArgAlaHisIleValProPheTyrGlyGlyAlaPheThrAsnThr 120
                                                                                                                                                                                                                                                                                                                       447
                                                                                                                                                                                                                                                                                                                                             121 IleSerAsnGluAlaIleMetThrIleAspThrGluMetMetValGlyProAlaHisTyr 140
                                                                                                                                                                                                                                                                                                                                                                   507
                                                                                                                                                                                                                                                                                                                                                                                                               567
                                                                                                                                                                                                                                                                                                                                                                                                                                      ArgTyrAspLysGlnIleArgTyrGluSerArgLysAlaTyrAlaGluLeuArgProArg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                             627
                                                                                      109 ATGICCATGICATGCGGTTTGTGCGGCGCCAACAACTGCCCGCGCCTCATGGTCTCGCCC 168
                                                                   20
                                                                                                                                                           9
                                                                                                                                                                                                       80
                                                                  MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro
                                                                                                                                                                                                                   CCAGCCAACTICGACCATAGCAGAACATGGACCACACATITCATGAAACAGCAGCTGCA
                                                                                                                                                                                                                                                     GlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHisLeu
                                                                                                                                                                                                                                                               388 GTGCAGCCACCGGCAAGAGCCCACATCGTGCCATTTTACGGAGGTGCATTCACCAACACT
                                                                                                                                                                                                                                                                                                                                                           ATTAGCAATGAAGCAATCATGACTATTGACACAGAGATGATGATGGTGGGGCCTGCCCATTAT
                                                                                                                                                                                                                                                                                                                                                                                         ProThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLysArgLysArgArg
                                                                                                                                                                                                                                                                                                                                                                                                        CCCACAATGCAGGAGAGAGCAGCGAAGGTGATGAGGTATAGGGAGAAGAGGGAAGAGGGGG
                                                                                                                                                           41 HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro
                                                                                                                                                                                                       ProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                           cectateacaagcaaatcagatacgagtccagaaagcttacgctgagcttcggccacgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             One grained wheat; chromosome Sa; ds; APETALA1; AP1; vernalisation; flowering; ZCCT1; ZCCT2; vrn1; vrn2; CArG box; plant; gene.
  9 5 -
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        grained wheat DV92 ZCCT1 genomic DNA.
                       Gaps:
                                            (1-975)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Yan L, Loukoianov A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ValAsnGlyArgPheValLys 187
                                            US-10-723-947-77 (1-187) x ADS19581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA; 7051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11-APR-2003; 2003US-00412137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26-NOV-2003; 2003US-00723947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
89.8%
86.6%
13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Triticum monococcum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADS19576 standard;
Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US2004205848-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Dubcovsky J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-DEC-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14-OCT-2004
                                                                                                                                                                                                                             268
                                                                                                                                                                                                                                                                          328
                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                   81
                                                                                                                                                                                                                                                                                                 101
                                                                                                                                                                                                                                                                                                                                                                   448
                                                                                                                                                                                                                                                                                                                                                                                          141
                                                                                                                                                                                                                                                                                                                                                                                                               508
                                                                                                                                                                                                                                                                                                                                                                                                                                      161
                                                                                                                                                                                                                                                                                                                                                                                                                                                             568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADS19576
       Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            One
                                                                 ò
                                                                                     g
                                                                                                              ò
                                                                                                                                 g
                                                                                                                                                                            g
                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                          ઠે
                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                         8
```

```
The invention relates to a recombinant ZCCT1 protein (Zn finger and CCT domain protein) coding sequence comprising an nucleic acid that hybridises co to the barley ZCCT1 CDNA appearing as ADS19577. The patent also discloses the identification of to genes, vrnl identified as API (APETALA) and vrn2 identified as ZCCT1 controlling vernalisation of flowering in temperate grasses. ZCCT1 also has a duplicate gene ZCCT2, all three genes have been localised to chromosome Sa of one grained wheat, Triticum monococcum. ZCCT1 is the repressor of API whose promoter contains a binding site for ZCCT1 termed the CArG box. Also included are a vector comprising the vector, a transgenic plant comprising the recombinant CCC comprising the vector, a transgenic plant comprising the recombinant CCC ZCCT1 protein coding sequence above (or a genetic construct that inhibits a ZCCT1 protein of API), a seed from the transgenic plant, a method for altering a plant's response to vernalisation and a molecular marker for vrn2 derived from ADS19577. The genetic construct is an interference RNA construct that inhibits ZCCT1 activity and comprises an antisense construct that inhibits ZCCT1 activity and comprises an antisense construct that inhibits ZCCT1 activity and comprises an antisense construct that inhibits ZCCT1 activity, an uccleic acid sequence encoding a DNA binding defective ZCCT1 protein companies is a plant ZCCT1 construct.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3241 GGGAACAGCAGCAGGCTCACGCTGGAGGTGGGCGCAGGCGGCCAACACCATGGCTCACCTA 3300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3301 GTGCAGCCACCGGCAAGAGCCCACATCGTAAGTAGTACTACTGCTTAATTGTTTCATCTC 3360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3061 ATTCACCATCATCATCACCATCATCAGGAGCACCAGCTGTGTGAGTACCAGTTCTTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCAGACAACTICGACCACCGCAGAACAIGGACCAGACCATIICAIGAAACAGCAGCGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3001 ATGTCCATGTCATGCGGTTTTGTGCGGCGCCAACAACAACTGCCCGCGCCTCATGGTCTCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CATGGCAACCACCACCACCACCACCATGGCTCGGCAGCAGACTACCCAGTGCCACCGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GlyAsnSerSerArgieuThrLeuGluValGlyAlaGlyGlyGlyHisMetAlaHisLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IleHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAlaAla
                                                     New recombinant ZCCT1 protein coding sequence useful for altering a plant's (e.g., wheat, barley, rye, oats, or forage grasses) response vernalization or flowering times.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 7051 BP; 2058 A; 1636 C; 1630 G; 1727 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ValGlnProProAlaArgAlaHisIle-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels:
                                                                                                                                                  Disclosure, SEQ ID NO 74; 115pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-723-947-77 (1-187) x ADS19576 (1-7051)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1.18e-64
816.00
30.7%
30.6%
77.9%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              genomic DNA sequence
WPI; 2004-728059/71.
P-PSDB; ADS19578.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    109
  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ર્જ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
```

```
355 GCCAGCACTATTAGCAACGCAACGATCATGACTATTGATACAGAAATGATGGTGGGGCCT 414
                                                                                                                                                                                                                                                                                                                           234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LeuValGlnProProAla----ArgAlaHisIleValProPheTyrGlyGlyAlaPhe 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   295 CTGCTGCAGCCACCGGCGCCCCAAGAGCCACCATCGTGCCATTCTGCGAGAGTGCATTC 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ThrAsnThrIleSerAsnGluAlaIleMetThrIleAspThrGluMetMetValGlyPro 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AlaHisTyrProThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLysArg 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LysArgArgArgTyrAspLysGlnIleArgTyrGluSerArgLysAlaTyrAlaGluLeu 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCTATAATCCAACGATGCAGGAGAGAGGCGAAGGTGATGAGGTACAGGGAGAAGAGG 474
             a repression defective ZCCT1 protein operably linked to a promoter or a nucleic acid sequence encoding a DNA binding defective ZCCT1 protein operably linked to a promoter. The present sequence is a plant ZCCT cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                    ProProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAla 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            80 AlaGlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlyGlnHisMetAlaHis 99
                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                         21 IleHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla 40
                                                                                                                                                                                                                                                                                                                                                                 41 HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyr---ProValProPro 59
     o a promoter or a ZCCT1 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ss; APETALA1; AP1; vernalisation; flowering; 2CCT1; 2CCT2; vrn1;
                                                                                                                                                                                                                                                                  ATGTCCATGTCATGTGGGTTTGTGCGGCGCCAGCAACTGCGCGTACCACATGATGTCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                        MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro
                                                                                 U; 0 Other;
                                                                                                                     Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                               C; 159 G; 108 T; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ArgProArgValAsnGlyArgPheValLys 187
                                                                                                                                                                                            Gaps:
 ZCCT1 activity,
                                                                                                                                                                                                                        US-10-723-947-77 (1-187) x ADS19590 (1-639)
                                                                                                           1.48e-61
768.50
82.6%
77.9%
13.3%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADS19593 standard; cDNA; 642
                                                                               BP; 164 A; 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CArG box; plant; gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Winter barley ZCCT-Hb CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
inhibits
                                                                                                                                                    Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hordeum vulgare.
                                                                               Sequence 639
                                                                                                           Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30-DEC-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            118 '
                                                                                                                                                                                                                                                                                                                                                                                                                      09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADS19593;
                                                       sednence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Barley;
                                                                                                                                                                               Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            vrn2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADS19593
88888888
                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                 원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
```

```
domain protein) coding sequence comprising a nucleic acid that hybridises to the barley ZCCTI cDNA appearing as ADS19577. The patent also discloses the identification of to genes, vrnl identified as API (APETALAI) and vrn2 identified as ZCCTI controlling vernalisation of flowering in temperate grasses. ZCCTI also has a duplicate gene ZCCT2, all three genes monococcum. ZCCT1 is the repressor of API whose promoter contains a binding site for ZCCT1 termed the CArG box. Also included are a vector comprising the recombinant ZCCTI protein coding sequence above, a cell comprising the vector, a transgenic plant comprising the recombinant ZCCTI protein coding sequence above (or a genetic construct that inhibits ZCCTI repression of API), a seed from the transgenic plant, a method for ZCCTI repression, for ZCCTI repression of API), a seed from the transgenic plant, a method for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      altering a plant's response to vernalisation and a molecular marker for Vrn2 derived from ADS19577. The genetic construct is an interference RNA construct (RNA) that inhibits ZCCT1 activity, and comprises an antisense construct that inhibits ZCCT1 activity, a nucleic acid sequence encoding a repression defective ZCCT1 protein operably linked to a promoter or a nucleic acid sequence encoding a DNA binding defective ZCCT1 protein operably linked to a promoter. The present sequence is a plant ZCCT CDNA
                                                                                                                                                                                                                                                                                                                                                    New recombinant ZCCTl protein coding sequence useful for altering a plant's (e.g., wheat, barley, rye, oats, or forage grasses) response to vernalization or flowering times.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                invention relates to a recombinant ZCCTl protein (Zn finger and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 642 BP; 165 A; 206 C; 163 G; 108 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure, SEQ ID NO 91, 115pp; English.
                                                                                                                                                                                                                                     Ą;
                                                                                           26-NOV-2003; 2003US-00723947.
                                                                                                                                     11-APR-2003; 2003US-00412137
                                                                                                                                                                                 (REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                                                                                               2004-728059/71
                                                                                                                                                                                                                                                                                 WPI; 2004-728059/
P-PSDB; ADS19594
US2004205848-A1
                                                                                                                                                                                                                                  Dubcovsky J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Alignment Scores:
                                            14-OCT-2004
```

641 144 146 8 Length:
Matches:
Conservative:
Mismatches:
Indels: 2.11e-60 756.00 82.6% 76.8% Percent Similarity: Best Local Similarity: Query Match:

US-10-723-947-77 (1-187) x ADS19593 (1-642)

1 MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPr	50
1 ATGTCCATGGCATGCGGTTTGTGCGGCGCCAGCAATTGCCCGTATCACATGATGTCGCCC 60	09
21 IleHisHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla 40	40
61 GITCITCITCATCATCACCATCACGAACATCGGCAGCGCGCGAGTACCAGTICITCGCC 120	120
41 HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAsspTyrProValProPro 59	53
121 CAAGGTCACCACCACCACCACGGGGGGGGGCAGCAGCTACCCACCGCCACCGCCA 177	177
 60 ProProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAla 79	79
	237

ò 셤 ò 셤 à AlaGlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHis

```
The invention relates to a recombinant ZCCT1 protein (Zn finger and CCT domain protein) coding sequence comprising a nucleic acid that hybridises to the barley ZCCT1 cDNA appearing as ADS19577. The patent also discloses the identification of to genes, vrn1 identified as AP1 (APETALA1) and varn2 identified as ZCCT1 controlling vernalisation of flowering in temperate grasses. ZCCT1 also has a duplicate gene ZCCT2, all three genes have been localised to chromosome 5a of one grained wheat, Triticum
                                                          117
                                                                                                                        357
                                                                                                                                                                                                                                                358 ACCAACACTATTAGCAACGCAACGATCATGACTATTGATACAGAGATGATGGCGGGGACT 417
                                                                                                                                                                                                                                                                                                             157
                                                                                                                                                                                                                                                                                                                                                                        477
                                                                                                                                                                                                                                                                                                                                                                                                                                         177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   537
                                                                                                                                                                                     ThrasnThrIleSerAsnGluAlaIleMetThrIleAspThrGluMetMetValGlyPro 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          to
                                                                                                                                                                                                                                                                                                                                                    478 AAGAAGCGGCGCTATGACAAGCAAATCCGCTACGAGTCCAGAAAAGCTTACGCGAGCTT
CCAGTGAATAGCACCAGGCTCACACAAGAGGTGGACGCAGGCGGCCAACAGATGGCTCAC
                                                                                              CTGCTGCAGCCACCGGCGCCGCCATAGAGCCATCGTGCCATTCCGCCGGAGTGCATTC
                                                                                                                                                                                                                                                                                                                                                                                                                               LysArgArgArgTyrAspLysGln1leArgTyrGluSerArgLysAlaTyrAlaGluLeu
                                                          --- ArgAlaHisIleValProPheTyrGlyGlyAlaPhe
                                                                                                                                                                                                                                                                                                             AlaHisTyrProThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLysArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New recombinant ZCCT1 protein coding sequence useful for altering a plant's (e.g., wheat, barley, rye, oats, or forage grasses) response vernalization or flowering times.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       One grained wheat, chromosome 5a; ss; APETALA1; AP1; vernalisation;
flowering; ZCCT1; ZCCT2; vrn1; vrn2; CArG box; plant; gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ArgProArgValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Disclosure; SEQ ID NO 82; 115pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Loukoianov A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         One grained wheat DV92 ZCCT2 cDNA
                                                          LeuValGlnProProAla---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDNA; 639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26-NOV-2003; 2003US-00723947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11-APR-2003; 2003US-00412137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yan L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2004-728059/71.
P-PSDB; ADS19585.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADS19584 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US20,04205848-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dubcovsky J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30-DEC-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .4-OCT-2004
                                                                                                                        298
                                                                                                                                                                                     118
                                                                                                                                                                                                                                                                                                                                                                                                                                         158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADS19584;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADSIGNATION AND ADDITION AND A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
                                                                                                                 a
                                                                                                                                                                        ò
                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

ZCCT1 protein coding sequence above (or a genetic construct that inhibits ZCCT1 repression of AP1), a seed from the transgenic plant, a method for altering a plant's response to vernalisation and a molecular marker for Vrn2 derived from ADS19577. The genetic construct is an interference RNA

monococcum. ZCCTI is the repressor of API whose promoter contains a binding site for ZCCTI termed the CArG box. Also included are a vector comprising the recombinant ZCCTI protein coding sequence above, a cell comprising the vector, a transgenic plant comprising the recombinant

```
111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  79
                         construct that inhibits ZCCTl activity, a nucleic acid sequence encoding a repression defective ZCCTl protein operably linked to a promoter or a nucleic acid sequence encoding a DNA binding defective ZCCTl protein operably linked to a promoter. The present sequence is a plant ZCCT cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Archicarchicaccininaricaccicaaccaacracccaccacaranceccc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21 IleHisHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            41 HisGlyAsnHisHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LeuValGlnProProAlaArgAlaHis-----IleValProPheTyrGlyGlyAlaPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ThrAsnThrIleSerAsnGluAlaIleMetThrIleAspThrGluMetMetValGlyPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               138 AlaHisTyrProThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLysArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCCATAATCTGACGATGCAGGAGAGAGAGGCGAAGGTGATGAGGTACAGGGAGAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LysArgArgArgTyrAspLysGlnIleArgTyrGluSerArgLysAlaTyrAlaGluLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  469 AAGAGGCGGTGCTATGACAAGCAAATCCGCTACGAGTCCCAGAAAAGCTTACGCCGAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ProAsp---AsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              169 ccercescalariscanceaccacacacacacacacacacacacacacacacarata a con control de contro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           80 AlaGlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Wild emmer wheat; ss; APETALA1; AP1; vernalisation; flowering; ZCCT2; vrn1; vrn2; CArG box; plant; gene.
                                                                                                                                                                                                           T; 0 U; 0 Other;
and
                                                                                                                                                                                                                                                                                                 Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ArgProArgValAsnGlyArgPheValLys 187
                                                                                                                                                                                                               Sequence 639 BP; 162 A; 197 C; 171 G; 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGCCACGGTCAATGGCTGCTTTGTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Langdon (tetrapolid) wheat ZCCT2 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-723-947-77 (1-187) x ADS19584 (1-639)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Triticum turgidum; subsp. dicoccoides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADS19587 standard; cDNA; 639
                                                                                                                                                                                                                                                                                                     4.69e-58
730.50
81.6%
75.8%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                 Similarity:
                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30-DEC-2004
                                                                                                                                                                                                                                                                           Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ٦
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADS19587
                                                                                                                                                        seguence
                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Si
Query Match:
                                                                                                                                                                                                                                                                                                           ..
No:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADS19587
                                                                                                                                                                                                                                                                                                                                    Score:
8888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ·$
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

157

ThrAsnThrIleSerAsnGluAlaIleMetThrIleAspThrGluMetMetValGlyPro 137

crécrecacicocacide de la constante de contra de la contra del la contra della contra

LeuValGlnProProAlaArgAlaHis-----IleValProPheTyrGlyGlyAlaPhe

100 289 118

B 6 B 6 B 6

409 GCCCATAATCTGACGATGCAGGAGAGAGGCGAAGGTGATGAGGTACAGGGAGAAGAG 468

AlaHisTyrProThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLysArg

138

```
The invention relates to a recombinant ZCCT1 protein (Zn finger and CCT domain protein) coding sequence comprising a nucleic acid that hybridises to the barley ZCCT1 cDNA appearing as ABS1957. The patent also discloses the identification of to genes, vantl identified as ABI (APBTALA1) and vanz identified as ZCCT1 also has a duplicate gene ZCCT2, all three genes CCC temperate grasses. ZCCT1 also has a duplicate gene ZCCT2, all three genes have been localised to chromosome Sa of one grained wheat, Triticum monococcum. ZCCT1 termed the CATC box. Also included are a vector comprising the recombinant ZCCT1 protein coding sequence above, a cell comprising the vector, a transgenic plant comprising the recombinant ZCCT1 protein coding sequence above, a cell comprising the vector, a transgenic plant comprising the recombinant of ZCCT1 repression of API), a seed from the transgenic plant, a method for a tering a plant's response to vernalisation and a molecular marker for vernal derived from ADS19577. The genetic construct is an interference RNA construct that inhibits ZCCT1 activity and comprises an antisense construct that inhibits ZCCT1 activity, a nucleic acid sequence encoding a DNA binding defective ZCCT1 protein operably linked to a promoter. The present sequence is a plant ZCCT cDNA
                                                                                                                                                                                                                                                                                                                                                to
                                                                                                                                                                                                                                                                                                                                              rye, oats, or forage grasses) response
                                                                                                                                                                                                                                                                                                                           New recombinant ZCCT1 protein coding sequence useful for altering a
                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; SEQ ID NO 85; 115pp; English.
                                                                                                                                                                                                                          Loukoianov A;
                                                                                                                                                                                                                                                                                                                                                plant's (e.g., wheat, barley, rye, vernalization or flowering times.
                                                                                                26-NOV-2003; 2003US-00723947
                                                                                                                                         11-APR-2003; 2003US-00412137
                                                                                                                                                                             (REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                                                                                                                                                              wheat,
                                                                                                                                                                                                                        Yan L,
                                                                                                                                                                                                                                                               2004-728059/71.
                                                                                                                                                                                                                                                             WPI; 2004-728059/
P-PSDB; ADS19588.
                 US2004205848-A1.
                                                                                                                                                                                                                        Dubcovsky J,
                                                       14-OCT-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seguence
```

CAAGGC---CACCACCACCACCACGACGCGGCGGCGGACTACCCACGCCACCGCCA 168 ::: GTT------CTTCAGCATCAGGAACAACACGGCTGCGCGAGTACCAGTTCTTCACC 111 9 9 79 21 IleHisHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla 40 MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro 1 ATGCCCATGTCATGCGGTTTGTGCGGCGCAAGCGACTGCCCGCACCACATGATCTCGCCC 61 ProAsp---AsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAla 41 HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro Sequence 639 BP; 161 A; 200 C; 172 G; 106 T; 0 U; 0 Other; 63 112 12 12 14 13 14 14 14 15 Length:
Matches:
Conservative:
Mismatches:
Indels: Gaps: US-10-723-947-77 (1-187) x ADS19587 (1-639) 5.8e-58 729.50 81.6% 75.3% Similarity: Percent Similarity: Alignment Scores: Pred. No.: 112 61 Best Local Si Query Match: DB: ò g ò 셤 g 셤 ò ò

80 AlaGlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHis 99

ò

```
The invention relates to a recombinant ZCCTI protein (Zn finger and CCT domain protein) coding sequence comprising a nucleic acid that hybridises to the barley ZCCTI CDNA appearing as ADS19577. The patent also discloses the identification of to genes, vrn1 identified as API (APETALA1) and temperate grasses. ZCCTI controlling vernalisation of flowering in temperate grasses. ZCCTI controlling vernalisation of flowering in have been localised to chromosome 5a of one grained wheat, Triticum monococcum. ZCCTI is the repressor of API whose promoter contains a binding site for ZCCTI termed the CANG box. Also included are a vector comprising the recombinant ZCCTI protein coding sequence above, a cell comprising the vector, a transgenic plant comprising the recombinant ZCCTI protein coding sequence above, a cell comprising the vector, a transgenic plant comprising the recombinant ZCCTI protein coding sequence above (or a genetic construct that inhibits ZCCTI repression of API), a seed from the transgenic plant, a method for altering a plant's response to vernalisation and a molecular marker for
                                          528
    177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New recombinant ZCCT1 protein coding sequence useful for altering a plant's (e.g., wheat, barley, rye, oats, or forage grasses) response to
LyshrgargargTyrAspLysGln1leArgTyrGluSerArgLysAlaTyrAlaGluLeu
                        469 AAGAGGGGGTGCTATGACAAGCAAATCCGCTATGAGTCCAGAAAAGCTTACGCCGAGGTC
                                                                                                                                                                                                                                                                                                                                                      de; APETALA1; AP1; vernalisation; flowering; 2CCT1;
; CArG box; plant; gene.
                                                                                                                                                                                                                                                                                                                    Langdon (tetrapolid) wheat ZCCT1 genomic DNA
                                                                                                    529 AGGCCACGGGTCAATGGCCGCTTTGTCAAG 558
                                                                                178 ArgProArgValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure; SEQ ID NO 78; 115pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                Triticum turgidum; subsp. dicoccoides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Loukoianov A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     vernalization or flowering times.
                                                                                                                                                                                                   BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 26-NOV-2003; 2003US-00723947.
                                                                                                                                                                                                 ADS19580 standard; DNA; 2913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11-APR-2003; 2003US-00412137.
                                                                                                                                                                                                                                                                             30-DEC-2004 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (REGC ) UNIV CALIFORNIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Dubcovsky J, Yan L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2004-728059/71.
                                                                                                                                                                                                                                                                                                                                                                            ZCCT2; vrn1; vrn2;
                                                                                                                                                                                                                                                                                                                                                        emmer wheat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     US2004205848-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P-PSDB; ADS19582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14-OCT-2004
                                                                                                                                                                                                                                         ADS19580;
    158
                                                                                                                                                                                                                                                                                                                                                        Wild
                                                                                                                                                             RESULT 8
                                                                                                                                                                                   ADS19580
                                                                                                                                                                                                   ò
                                    g
                                                                              ઠે
                                                                                                                셤
```

·		•			_		ω				9	6	9				. 9		56	σ.	. 9		9		36	
zccil protein a plant zccr her;	*		ValSerPro 20	40	ט מ	73	80	10	GCTCACCTA 856		91	10	97	109	CATAATTCT 103	109	TCTTGATAT 109	100	11		TTGACCAAC 121	109	PACTAACCA 127	109	13	109
fective ence is U, 0 Ot	2913 168 3 9 424 2		SProArgLeuMet	uCysGluTyrGln	GCGTCAGCACCAG adenTvrDroVal	ccagro	OPheHisGluThr 	yGlyGlnHisMet		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	TACCGCTTAATTG	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	cccaccraatt		CATATATCTGTCA	1	ATGCGGGAATGGA	;	TTTGTATTAGTTG	* * * * * * * * * * * * * * * * * * *	TATTTCATTTTAT		ACTTGTGTTCAAT		тестасставаес	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
a DNA binding de The present sequ 575 G; 844 T; 0	Length: Matches: Conservative: Mismatches: Indels: Gaps:	-2913)	31yAlaAsnAsnCy 3GCGCCAACACTG	SlnGluHisGlnLe	-AGGAGCACCAGCT		ChrTrpThrArgPr CATGGACCACACC	3luValGlyAlaGl	BAGGTGGCGCAGG	[]e	Arcgraagtagtag	†	rcctccttaaaat		CCATGTAACCATCT		CTCCTGAAAAAGAT		ratagagtttgtgt		CATACATATAAACT		ATACTGAAAATTTG		BACTTTAATCAAGC	1
encoding promoter. A; 627 C;	1.01e-51 670.50 27.83 64.0%	x ADS19580 (1.	MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro Angreadgreatgescoll	IleHisHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla	icaicaccaicaid entententente	CAAGGCAACCACCACCACCACAC	ProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAlaAla 	rArgLeuThrLeuC	GGGAACAGCAGCAGCACCACGCTGGGGGGGCGCGGCGGCGGCGGCCGAGGCTCACCTA	ValGInProproAlaArgAlaHisIle	GGCAAGAGCCCACA		TTGCCGATGGATGCGTCCCTGGCTTCCTCTTAAAAATCCCCCACCTAATTTATGTÇCATC		TATACCCACTACAAAAAAAAAGCACCATGTAACCATCTCATATATCTGTCACATAATTCT		GTTAATGTACGCTGCTCAATTGTTCTCCTGAAAAAGATATGCGGGAATGGATCTTGATAT		TCTTTAATTTTCTATGGAGGCATATAGAGTTTGTGTTTTGTATTAGTTGATGCAGAAT	1	TGTATGGGTTGTCAAATCATCAGTCATACATATAAACTTATTTCATTTTATTTGACCAAC		aacaaggtaatcagtcatacatgċatactgaaaatttgacttgtgttcaataactaacca		actcgaccggcacagctgggggaagactttaatcaagctgctagcta	
acid sequence, linked to a post box sequence.	: ty: arity:	77 (1-187)	MetSerMetSe 	IleHisHisHi	AllCAlCAlC6	CAAGGCAACCA	ProaspasnPh 	GlyAsnSerSe	GGGAACAGCAG	ValGlnProPr	GTGCAGCCACC		TTGCCGATGGA		TATACCCACTA	1	GTTAATGTACG	1	TCTTTAATTTT	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	TGTATGGGTTG		AACAAGGTAAT		ACTCGACCGGC	
nucleic a operably genomic DI Sequence	Alignment Scores Pred. No.: Score: Percent Similari Best Local Simil Query Match: DB:	0-723-947-	1 578	21	638 14	869	61	81	797	101	857	109	917	109	716	109	1037	109	1097	109	1157	109	1217	109	1277	9
888999	Alignmer Pred. No Score: Percent Best Loc Query Ma	US-10	ò a	8 8	9 è	음	දු දු	δ	q	ò	d G	ò	qq	ò	q	ò	qq	· &	QQ	ò	q	È	qq	ò	QΩ	ě

RESULT 9 ADS19589

අු	1337	TAACATATCTCTTTATGGGATCAAGGAATACATATGCGCTCAATTCTCAACTTGTCAATA 1396
ò	109	109
д	1397	TCTATCTGGAGTCCACACTTTATGGTAATTAATTGACAAAGTTTTGTGAAATGGACAATA 1456
ò	109	109
QQ	1457	TACATACTGGATCGATGCACCCTTTTTCCCATTTTATGTGGTCATTATGAATTTGATTGT 1516
ò	109	109
Q	1517	TAITITAGIAITITCAAITITTAICTIGAGCTAGITITIGCAAGICTGTAGCTCAIAIATAACT 1576
ò	109	109
셤	1577	GATACTACTCCCCACGATAGCTTGCGTAGTGGCCCGGGTGATCGATC
ò	109	109
q	1637	AACTGATCGAGATCGGGTCCCAAAAAAGAACAAACCCATACAAAATGGAAAGAAGAAGATCCTT 1696
ò	109	109
qq	1697	GTTTAGTTAGTTTGCATCAGAAAATTGCCTAATTAGTTACTTGCTATCAATCTTTTGAAC 1756
ò	109	109
e e	1757	ATGGCATGTTCACCCCAAACGGACTCAGATCACAATTATTGATGAAGTTACGCCTTTTAA 1816
ò	109	109
q	1817	AAACTCATAAAACTGTACATACATGTACAGGGCTACACACATGTACATAATACACCTAAT 1876
à	109	109
d d	1877	TAAAACGTATATTCGTAGACCAATTGTTTTGGACGGTGCACATCTTTGAAAAAAATGCC 1936
ò	109	109
qq	1937	AGAGGAGTTGTTAGCTTCCACTGTCCAGAAATAGAATAG
ò	109	109
Q	1997	AATGAAAATGGATCATTTTCTAGTTAATTAGAGACCAATTAGATACTTCATAAACAGGGG 2056
ò	109	109
đ	2057	AGTATCAAGTACGTATCTGCTACCCTAAGAAAGTACATAACTGCGATCTTATGATTATTT 2116
ò	110	ValProPheTyrGlyGlyAlaPheThrAsnThr1leSerAsnGl 124
QQ	2117	TCCTCTTGATGTTCAGGTGCCATTTTACGGAGGTGCATTCACCAACACTATTAGCAATGA 2176
ò	124	ualaileMetThrileAspThrGluMetMetWalGlyProAlaHisTyrProThrMetGl 144
අු	2177	AGCAATCATGACTATTGACACAGAGATGATGGTGGGGGCCTGCCCATTATCCCACAATGCA 2236
ò	. 144	
Q	2237	GGAGAGAGCAGCGAAGGTGATGAGGTATAGGGAGAAGAGGAAGAGGGGGGGG
8 8	164	BGInileArgTyrGluSerArgLysAlaTyrAlaGluLeuArgProArgValAsnGlyAr 184 [http://www.nrg.na.na.na.na.na.na.na.na.na.na.na.na.na.
o T	1677	I CAGAIACGAGICCAGAMAGCIIACGCIGAGCIICGGCCACGGGICAACGGCIG
ŏ	18	187
qq	2357	CTTTGTCAAG 2366

σ

8 g ò qq ઠે g à 셤 ò 셤

```
vernalisation; flowering; ZCCT1; ZCCT2; vrn1;
                                                                                                                                                                                                                                              New recombinant ZCCT1 protein coding sequence useful for altering a plant's (e.g., wheat, barley, rye, oats, or forage grasses) response to
                                                                                                                                                                                                                                                                                                  invention relates to a recombinant ZCCT1 protein (Zn finger and CCT
                                                                                                                                                                                                                                                      plant's (e.g., wheat, barley, rye, oats, vernalization or flowering times.
                                                                                                                                                                                                                                                                                Disclosure; SEQ ID NO 87; 115pp; English
                                                                                                                                                                                                    Loukoianov A;
                                                  Winter barley ZCCT-Ha genomic DNA
BP.
ADS19589 standard; DNA; 1985
                                                                                                                                                26-NOV-2003; 2003US-00723947
                                                                                                                                                                11-APR-2003; 2003US-00412137
                                                                  Barley; ds; APETALA1; AP1; vrn2; CArG box; plant; gene
                                 (first entry)
                                                                                                                                                                                  (REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                   Subcovsky J, Yan L,
                                                                                                                                                                                                                   WPI; 2004-728059/71.
P-PSDB; ADS19591.
                                                                                             Hordeum vulgare.
                                                                                                              US2004205848-A1
                                30-DEC-2004
                                                                                                                              14-OCT-2004
                ADS19589;
```

g ò g ò 셤 ò 원 à 셤 ö 유 ٠, ď

ò

domain protein) coding sequence comprising a nucleic acid that hybridises to the barley ZCCT1 CDNA appearing as ADS19577. The patent also discloses to the identification of to genes, vnnl identified as API (APETALAL) and vnn2 identified as ZCCT1 controlling vernalisation of flowering in temperate grasses. ZCCT1 also has a duplicate gene ZCCT2, all three genes to the vernalised to chromosome Sa of one grained wheat, Triticum monococcum. ZCCT1 is the repressor of API whose promoter contains a binding site for ZCCT1 termed the CArG box. Also included are a vector comprising the recombinant ZCCT1 protein coding sequence above, a cell comprising the vector, a transgenic plant comprising the recombinant CZCT1 protein coding sequence above, a cell comprising a plant's response to vernalisation and a molecular marker for ZCCT1 repression of API), a seed from the transgenic plant, a method for altering a plant's response to vernalisation and a molecular marker for Vrn2 derived from ADS19577. The genetic construct is an interference RNA construct that inhibits ZCCT1 activity and comprises an antisense construct that inhibits ZCCT1 activity and comprises an antisense a repression defective ZCCT1 protein operably linked to a promoter or a nucleic acid sequence encoding a DNA binding defective ZCCT1 protein genomic DNA sequence

C; 393 G; 531 T; 0 U; 0 Other; Sequence 1985 BP; 572 A; 489

셤

8

셤 ò 셤 ò

ò

MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro Conservative: Mismatches: Indels: Length: Matches: Gaps: US-10-723-947-77 (1-187) x ADS19589 (1-1985) 1.64e-44 590.00 29.6% 27.9% 56.3% Best Local Similarity: Query Match: DB: Percent Similarity: Alignment Scores: Pred. No.: ò

336 Argrecargreargregerriergegegegegeageaacrecegeargreargargregee

g 8

109 109 ద ò ద 395 21 IleHisHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla 40

109

1109 990 ATGTTAATTCCTTGACAAGTTTGTGAAGTGGAAAATATATTTACTTTATCAATGCACCT 1049 1110 TGCTTATAGCTCATATATAACTGATACTACTCCCCATAATTTTTCCGTAGTGGTCGGGTG 1169 1170 ATCGATCTACCTAGTTCATAAACTTATCGAGATCAGGTCCAAAAACAGACCAAAACCTCAC 1229 230 GAAATGGAAACAAGATCCTTGTTTAATTAGTTTGCATCAGGAAATTGCTTATTACTTGCT 1289 1410 TACATAATACACCTAGTTAAAACATATATCCATAGAGCAATTGAGTTTGGACTATGCGCT 1469 749 105 929 105 105 109 455 509 569 CCAGAGAACAACCAGGCTCACACACGGGAGGTGGACGCAGGCGGCCAACACACATGGCTCAC 629 689 105 809 105 869 105 CTAACAAGGTAACTAGTTAATTCCTTTATGGGGTCAAGCAATACATATGTGCACGCCTTC 989 79. 53 66 GITCITCITCATCATCACCATCATCAGAACACCCACTGCACGAGTACCAGTTCTTCGCC 41 HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyr---ProValProPro crecrecaeccaecececeaaaaaeccaecarcaraaracraeracraeracraerrarrr TTCTATCTCTTGCCGATCGATGGGACCTGCTAACAAAATCACACTTTCTTAATTTCCAT 810 TATICIGGICGATIGIAAITITACCAAGGCAGAAAGCTIGIATITIGIATCAGTIGAIGCA .050 ACTCTCATTTTATGTGGTCATTTATGAATTTTATAATTTTCTGTTGAGCTAGTTTTGTA 1290 GTCAATCTTATGAAGATGGTATTTTCCTCACAAATGGATCCAGTCACAATTGTTGATGAA --ArgAlaHisIle-----510 CCGCCAGACAATTGCCACCACACAATCATGGACCACGCCGTTTCATGAAACAGCAGCT ProProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAla AlaGlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHis 750 CTCAAAAAAGCTACCGCCATGTGACCAGCTCATATATATGCCACATAACTCCTTTAATT LeuValGlnProProAla------396 9 80 570 630 690 105 930 100 105 105 105 105 105 105 106 105 105 105

```
Query Match:
                                                                                                                                                                                            ..
No.:
                                                                                                                                                                                                        Score:
  임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                    ે
                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                         1589
                                                                                    1649
                                                                                                                            1709
                                                                                                                                                              1829
                                                                                                                                                                                                                                                  140
                                                                                                                                                                                            160
                                                              109
                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates to a recombinant ZCCTI protein (In finger and CCT domain protein) coding sequence comprising a nucleic acid that hybridises to the barley ICCTI cDNA appearing as ADS19577. The patent also discloses the identification of to genes, vrnI identified as API (APETALA1) and vrnI identified as ICCTI controlling vernalisation of flowering in temperate grasses. ICCTI also has a duplicate gene ICCTI, all three genes have been localised to chromosome 5a of one grained wheat, Triticum
                                                                                                                                                                                                                                                                                                                                                                                                                                 ds; APETALA1; AP1; vernalisation; flowering; ZCCT1; ZCCT2; vrn1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               t
                                                                                                                                                 IleSerAsnGluAlaIleMetThrIleAspThrGluMetMetValGlyProAlaHisTyr
                                                                                                                                                                                                           CCAACGATGCAGGAGAGAGGCGAAGGTGATGAGTAACAGGGAGAAGAAGAAGAGGCGG
                                                                                                                            1650 TATGACTATTTTCTTCTTGATGTTCAGGTGCCATTCTGCGAGGTGCATTCGCCAGCACT
                                                                                                                                                                                           ProThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLysArgLysArgArg
                                                                                                                                                                                                                                       ArgTyrAspLysGlnIleArgTyrGluSerArgLysAlaTyrAlaGluLeuArgProArg
                                         1530 TACAGTCAAGTGCAACACTGAATGAAAATGGATCAAGTTTTGGTTAACAAGAGACCAACT
                                                                                    1590 TATACTTCATAAACAAGGAATATCAAGTACATATCTGCTACCCACAAGAAAGTACACCT
 TCATTGGACACAAAGGCCCGGGAAGTTGTTCTCTTTCATTGTCTAAAAAAATAGAACAGT
                                                                                                         -----ValProPheTyrGlyGlyAlaPheThrAsnThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New recombinant ZCCT1 protein coding sequence useful for altering a plant's (e.g., wheat, barley, rye, oats, or forage grasses) response vernalization or flowering times.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; SEQ ID NO 90; 115pp; English.
                                                                                                                                                                                                                                                                                                    Grcaargeccecrrreccaag 1910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Loukoianov A;
                                                                                                                                                                                                                                                                                ValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                           Winter barley ZCCT-Hb genomic DNA
                                                                                                                                                                                                                                                                                                                                               ADS19592 standard; DNA; 2043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2003US-00723947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11-APR-2003; 2003US-00412137
                                                                                                                                                                                                                                                                                                                                                                                                                                            vrn2; CArG box; plant; gene.
                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Yan L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2004-728059/71.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               P-PSDB; ADS19594.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hordeum vulgare.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US2004205848-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dubcovsky J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26-NOV-2003;
                                                                                                                                                                                                                                                                                                                                                                                        30-DEC-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14-OCT-2004
                                                                                                                                                                       1710
                                                                                                                                                                                                                1770
                                                                                                                                                                                                                                                           1830
                                                                                                                                                                                                                                                                                                     1890
                     109
                                                                                                         110
                                                                                                                                                                                            141
                                                                                                                                                                                                                                                                                181
                                                              109
                                                                                                                                                  121
                                                                                                                                                                                                                                       161
                                                                                                                                                                                                                                                                                                                                                                    ADS19592;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Barley;
                                                                                                                                                                                                                                                                                                                        8
                                       g
                                                                                 g
                                                                                                                          d
                                                                                                                                                                     엄
                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                   g
                    ò
                                                             ઠે
                                                                                                                                                ò
                                                                                                                                                                                                              g
                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                             8
                                                                                                       ò
                                                                                                                                                                                           ò
```

```
1076
monococcum. ZCCT1 is the repressor of AP1 whose promoter contains a binding site for ZCCT1 termed the CArG box. Also included are a vector comprising the recombinant ZCCT1 protein coding sequence above, a cell comprising the recombinant ZCCT1 protein coding sequence above, a cell zCCT1 protein coding sequence above (or a genetic construct that inhibits ZCCT1 repression of AP1), a seed from the transgenic plant, a method for altering a plant's response to vernalisation and a molecular marker for Vrn2 derived from ADS19577. The genetic construct is an interference RNA construct (RNA) that inhibits ZCCT1 activity and comprises an antisense construct that inhibits ZCCT1 activity, a nucleic acid sequence encoding a repression defective ZCCT1 protein operably linked to a promoter or a nucleic acid sequence encoding a pub hinding defective ZCCT1 protein operably linked to a promoter. The present sequence is a plant ZCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  :::
GTTCTTCTTCATCATCACCATCATCAGGAACATCGGCAGCGCGAGTACCAGTTCTTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MetSerMetSerCygGlyLeuCygGlyAlaAsnAsnCysProArgLeuMetValSerPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValPro---Pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60 ProProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 717 CTGCTGCAGCCACCGCCGCCACAAGAGCCACCATCGTGAGTACTACTGCTTAATCGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATCTTCCCGGATCGATGTGACTCCTTCTAACAAAAATCACACTTTCTTAATTTCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             837 TCAAAAAAAGCTAGCGCCATGTGACCAGCTCATATATCTGTCACATAACTCCGTTAATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             897 ATGCTGGTCGATTGTAATTTACCAAGGCAGAAAGTTTGTGTTTTGTATCAGTTGATGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1017 TAACAAGGTAATCAGTTAATTCCTTTATGGGGTCAAGCAACATATGTCCACGCCTTCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     420 Argrecargecargecgerrrergecgececageaarrgececaracacargargreece
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IleHisHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             80 AlaGlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHis
                                                                                                                                                                                                                                                                                                                                                                             Sequence 2043 BP; 567 A; 495 C; 413 G; 527 T; 0 U; 41 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  2043
146
11
29
332
4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-723-947-77 (1-187) x ADS19592 (1-2043)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LeuValGlnProProAla-Arg-
                                                                                                                                                                                                                                                                                                                                                                                                                                                  6.95e-43
572.50
30.3%
28.2%
54.6%
                                                                                                                                                                                                                                                                                                                             genomic DNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
```

106

ò

ACC 1136	106	CTC 1196	106	NNN 1256	106	CGA 1316	106	TTG 1376	106	TGG 1436	106	TAC 1496	108	AAT 1556	108	AGA 1616	108	GAC 1676	-Ileva 110	GGT 1736	eAs 130		 GGT 1856	use 170	GTC 1916			
AGATATATTGGGATCAATGCACCC		\TTTGAATGCTATTTTGTATTTAANTT		'TTAACTGGAANNNNNNNNNNNNNNNN		GATCAGTNCAAAANAGGCCAAACCTCN		GCATCAGGAAATNGGCTACTTAATTAC		TCACAAATGGATCCAGCTCACAATTTT		AGGTGCATAGATGTACAGGGCTACACG		ATATGCATAGAGCAATTGAGTTTGGAC		TTGTTCTTCCATTGTCTAAAAACAT		GAATGGGTCAATTTTTGGTTAACGAGA		TCACCATTGTTTTCCTCTCGATGTTCA	rIleSerAsnGluAlaIleMetThrIl 	rProThrMetGlnGluArgAlaAlaLy		gArgTyrAspLysGlnIleArgTyrGl	GCGCTATGACAAGCAAATCCGCTACGA	gValAsnGlyArgPheValLys 187	GGTCAACGCCCCTTTGTCAAG 1968	
TTAATTCCTTGGCAGAGTTTGTGAAATANAAGATATATATTGGGATCAATGCACCCTACC		TCTTTCTCATTTTATGTGGNCATTTAAAAATTTGAATGCTATTTTGTATTTAANTTTCTC		NTGAGCTAGTTGNGAAGCTTATAGCTCAATTTAACTGGAANNNNNNNNNN		NNNNNNNCGAGTTCATGAAACTGATCAAGATCAGTNCAAAANAGGCCAAACCTCNCGA		AATGGAATTNCGATCCTTGTTAANTAGTTTGCATCAGGAAATNGGCTACTTAATTACTTG		CTACCAATNITATGAAGATGGCATGTTTCCTCACAAATGGATCCAGCTCACAATTTTTGG		TGAAGTTAAACATTTTTAGCAATTCATAAAAGGTGCATAGATGTACAGGGCTACACGTAC	AlaHis	 acacgcacataatacgcctagttaaaacatatatgcatagagcaattgagtttggacaat		GCGCTTCTTTGGACATAATGGCCCGGGAAATTGTTCTCTTCCATTGTCTAAAAACATAGA	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	acagttagaatcaagtgcaccactgaatgagaatggggtcaatttttggttaacgagagac			PropheTyrGlyGlyAlaPheThrAsnThrlleSerAsnGluAlalleMetThrlleAs 	pThrGluMetMetValGlyProAlaHisTyrProThrMetGlnGluArgAlaAlaLysVa		MetargTyrargGluLysargLysargArgArgTyraspLysGlnIleArgTyrGluSe	GATGAGGTACAGGGAGAAGAAGAAGAAGCGGCGCTATGACAAGCAAATCCGCTACGAGTC	rArgLysAlaTyrAlaGluLeuArgProArgValAsnGlyArgPheVal	CAGAAAAGCTTACGCCGAGCTTAGGCCACGGGTCAACGGCCGCTTTGTCAAG	
1077 T	106	1137 TO	106	I197 NT	106	1257 M	106	1317 A	106	1377 CT	106	1437 TC	107	1497 AC	108	1557 GC	108	1617 AC	109	1677 CF	110 1E		 17 197	150 IN	1857 G	170 r	1917 CP	RESULT 11
q	ò	QQ	ò	qq	ò	Ω	ò	qq	ò	q	ò	qq	ò	g	ò	QQ	ŏ	Dp	à	QQ	<u>ک</u> ج	ò	g	à	qq	ý,	Dp	RESULT

New recombinant ZCCT1 protein coding sequence useful for altering a plant's (e.g., wheat, barley, rye, oats, or forage grasses) response to vernalization or flowering times.

Loukoianov A;

WPI; 2004-728059/71

P-PSDB; ADS19585.

(REGC) UNIV CALIFORNIA Dubcovsky J, Yan L,

26-NOV-2003; 2003US-00723947. 11-APR-2003; 2003US-00412137.

US2004205848-A1

14-OCT-2004

Disclosure; SEQ ID NO 81; 115pp; English.

```
The invention relates to a recombinant ZCCT1 protein (Zn finger and CCT domain protein) coding sequence comprising a NDS19577. The patent also discloses to the barley ZCCT1 CDNA appearing as ADS19577. The patent also discloses the identification of to genes, vrn1 identified as API (APETALA1) and vrn2 identified as ZCCT1 controlling vernalisation of flowering in temperate grasses. ZCCT1 also has a duplicate gene ZCCT2, all three genes are noncoccum. ZCCT1 is the repressor of API whose promoter contains a monococcum. ZCCT1 termed the CArG box. Also included are a vector comprising the recombinant ZCCT1 protein coding sequence above, a cell comprising the vector, a transgenic plant comprising the recombinant a zCCT1 protein coding sequence above, or a cell comprising a plant s response to vernalisation and a molecular marker for ZCCT1 repression of API), a seed from the transgenic plant, a method for altering a plant s response to vernalisation and a molecular marker for Vrn2 derived from ADS19577. The genetic construct is an interference RNA construct that inhibits ZCCT1 activity and comprises an antisense a repression defective ZCCT1 protein operably linked to a promoter or a nucleic acid sequence encoding a DNA binding defective ZCCT1 protein operably linked to a promoter. The present sequence is a plant ZCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2757 CCGTCGGCCAATTGCCACCACAGATCATGGACCACACCGTTTCATGAAACAGCAGCT 2816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21 IleHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2589 AIGTCCAIGTCAIGCGGITTGTGCGGCGCACGAGCGACTGCCCGCACCACAIGAICTCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41 HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 ProAsp---AsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 5734 BP; 1563 A; 1278 C; 1220 G; 1673 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-723-947-77 (1-187) x ADS19583 (1-5734)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.93e-40
547.50
28.2%
26.2%
52.2%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                genomic DNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match:
DB:
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
```

AlaGlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlnHisMetAlaHis 99

80

One grained wheat; chromosome 5a; ds; APETALA1; AP1; vernalisation; flowering; ZCCT1; ZCCT2; vrn1; vrn2; CArG box; plant; gene.

Triticum monococcum

One grained wheat DV92 ZCCT2 genomic DNA.

30-DEC-2004 (first entry)

ADS19583;

```
WO2004081210-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Oryza sativa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16-DEC-2004
                                                                                                                                                                                                                                              2431
                                                             2131
                                                                                               2191
                                                                                                                                                                                                                                                                                                                                                                                         2671
                                                                                                                                                                                                                                                                                                                                                                                                                            2731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                2791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2851
                                                                              109
                                                                                                                  109
                                                                                                                                                     109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADS16783;
           109
                                            109
                                                                                                                                                                                        109
                                                                                                                                                                                                                            109
                                                                                                                                                                                                                                                                109
                                                                                                                                                                                                                                                                                                  109
                                                                                                                                                                                                                                                                                                                                     110
                                                                                                                                                                                                                                                                                                                                                                        118
                                                                                                                                                                                                                                                                                                                                                                                                            138
                                                                                                                                                                                                                                                                                                                                                                                                                                              158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADS16783
                     d
                                            ð
                                                       셤
                                                                         ठ
                                                                                           ద
                                                                                                                 8
                                                                                                                               g
                                                                                                                                                ਨੇ
                                                                                                                                                                   g
                                                                                                                                                                                        ò
                                                                                                                                                                                                      d
                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                          유
                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                ራ ብ
                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                           요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1410
                                                                                                                                                                                                                                                                                         1470
                                                                                                                                                                                                                                                                                                                             1530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2010
                                                                                                                                                             Trccagcrcttgccgarcgcrtgggccrcctrcraacaaaagrrcccrtrtacgraarcr 1650
                                                                                                                                                                                                                                                                                                                                                                                                                                     CCATCTACTCCCCCCCCCCCCCCCCCCCGGCATCTCAAAAAAAGTTAGCGCCATGTAACC 1710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1711 AGCTCATATATCTGTCACGTAATTCTGTTAATTTATGCTGGTTGAATATAATCTCCCAAG 1770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1771 GCAGAGTGTTTTGTGTTTTGTTTGATGCACAAGAATGGGCACTCACATCATCAGTT 1830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1831 ACACATACATACTTATTTCATTTTTATTTGACTAACAAGGTAATCAGTTAATTCCTTTATG 1890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAACAAGCAATACATATGTCCACGCCTTCATGTTAATTCCTTGACAAAGTTTGTGAAAT 1950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2011 TITIAGIGCIAITITGIAITIAAAATITICICITAAGCIIGITITGIAAGCITAIAGCIC 2070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              109
                                                                                                                                                                                                                                                                                                                                                                                                                    106
construct that inhibits ZCCTl activity, a nucleic acid sequence encoding a repression defective ZCCTl protein operably linked to a promoter or a nucleic acid sequence encoding a DNA binding defective ZCCTl protein operably linked to a promoter. The present sequence is a plant ZCCT
                                                                                                                                                                                                  40
                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                        79
                                                                                                                                                                                                                                                                                                            66
                                                                                                                                                                                                                                               1354 CAAGGC---CACCACCACCACCACGACGCGGCGGACTACCCACCGCCACGCCA
                                                                                                                                                                                                                                                                                  CGGTCAGCCAATTGCCACCACTGCAGATCATGGACCACACGCTTTCATGAAACAGCAGCT
                                                                                                                                                                                                                                                                                                                     GCAGGGAACAGCAGCAGGCTCACGCTGGAGGTAGACGCGGCGGCCGAAAACATGGCTCAC
                                                                                                                                                                                                IleHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla
                                                                                                                                                                                                                                                                        ProAsp---AsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAla
                                                                                                                                                                                                                                                                                                           AlaGlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHis
                                                                                                                                                                                                                                                                                                                                                        41 HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGACAATATATATATACTGGATCAGTGCACCATCTTTTTCATTTTATGTGGTCATTTATGAA
                                                    U; 0 Other
                                                                              3454
145
12
26
367
5
                                                    0
                                                                             Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                   Ë
                                                   716 G; 980
                                                                                                                                           (1-3454)
                                                    ΰ
                                                                                                                                            US-10-723-947-77 (1-187) x ADS19586
                                                                                                                                                                                                                                                                                                                                              LeuValGinProProAlaArg
                                                    Sequence 3454 BP; 962 A; 796
                                                                             1.99e-39
538.00
28.5%
26.4%
                                                                                                                 51.3%
                                   DNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                        -AlaHisIle-
                                                                   Alignment Scores:
Pred. No.:
Score:
Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                  21
                                                                                                                                                                                                                                                                                         1411
                                                                                                                                                                                                                                                                                                            80
                                                                                                                                                                                                                                                                                                                             1471
                                                                                                                                                                                                                                                                                                                                              100
                                                                                                                                                                                                                                                                                                                                                                1531
                                                                                                                                                                                                                                                                                                                                                                                                  1591
                                                                                                                                                                                                                                                                                                                                                                                                                                      1651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1951
                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                 106
                                                                                                                                                                                                                                                                                                                                                                                                                    106
                                                                                                                                                                                                                                                                                                                                                                                                                                                       107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         109
                                    genomic
                                                                                                                 Query Match:
DB:
88888888
                                                                                                                                                             ð
                                                                                                                                                                              g
                                                                                                                                                                                                  ò
                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                     ઠ
                                                                                                                                                                                                                                                     ద
                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                              . <del>Q</del>
                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      а
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

```
2430
                                          2130
                                                                                                                           2190
                                                                                                                                                                                                               2250
                                                                                                                                                                                                                                                                                                    2310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2850
                                                                                                                                                                                                                                                                                                                                                                                                                                    109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                178
109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       138
                                          2071 AAGTATAACAGATACTACTCCCCATAATTGCTTCCGTAGTGGCCGGGTGATCAATCTACC
                                                                                                                           GAGTICATAAAACTGATCGAAATCAGATCCAAAACAGACCAAAAACTCACGAAATAGAAA
                                                                                                                                                                                                               CAAGATCCTTGTTTAATTAGTTTTGCACCAGGAAATTGCCTACTTAATTACTTTCTATCAA
                                                                                                                                                                                                                                                                                                    2251 TCTTATGAAGATGGTATGTTTCTCACATATGGTGATCCAGATCACAATTGTTGACGGAGT
                                                                                                                                                                                                                                                                                                                                                                                       2311 TAAACATTTTTAGCAATTCATAAAACCGTGCACAGATGTACAGGGCTACGCGTATGCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2371 TACATAATACACCTAATTAAAACATATATTCATAGAGCGATTGAGTTTGGACTGTGCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2491 TACAATCAAGTGCACCACTGAATGAAATGGGTCAATTCTGGTTAATAAGAGACCAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2551 TACTTCATAAACAGGGAATATCATGTACATATCTGCAACCCACAGGAAAAGTACAGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -----valProPheTyrGlyGlyAlaPheTh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               aHisTyrProThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLysArgLy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rAsnThrIleSerAsnGluAlaIleMetThrIleAspThrGluMetWetValGlyProAl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sArgArgArgTyrAspLysGlnIleArgTyrGluSerArgLysAlaTyrAlaGluLeuAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGGCGGTGCTATGACAAGCAAATCCGCTATGAGTCCAGAAAAGCTTACGCCGAGCTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Lhd4; plant flowering, flowering time; efficient rice growth; gene; 88.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Lhd4-related Oryza sativa cDNA sequence SegID5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gProArgValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCACGGGTCAATGGCCGCTTTGTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   standard; cDNA; 1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
```

133

153 908 998

```
This invention relates to a novel DNA, designated Lhd4 and encoding a protein capable of delaying flowering in a plant. The invention is useful for delaying flowering of a plant, which comprises expressing the novel DNA within the cells of a plant, such as rice. The Lhd4 protein enables control of flowering time of a plant, such as rice, thus caushing efficient development and growth of an excellent variety. The present sequence is an Oryza sativa cDNA sequence which is claimed in the
                                                                                                                                                                                                                                                                                                                                             154 ArgGluLyeArgLyeArgArgTyrAspLysGln[]eArgTyrGluSerArgLysAla 173
                                                                                                                                                                                                                          134 MetValGlyProAlaHisTyrProThrMetGlnGluArgAlaAlaAlaAlaWetArgTyr
                                    -----GlualalleMetThrIleAspThrGluMet
                                                                                                                                                                   687 GACGCAGCGAGCTCGATGCCCAAGGAGATGGTGGCCGCCATGGCCGATGATGATGGAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                      807 AAGGAGAAGAGAAGAAGAGGTGCTACGAGAAGCAAATCCGGTACGCGTCCAGAAAAGCC
                                                                                                                                                                                                                                                                    HisLeuValGlnProProAlaArgAlaHisIleValProPheTyrGlyGlyAlaPheThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               flowering in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Masuda H, Yano
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Lhd4; plant flowering; flowering time; efficient development;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                174 TyralaGluLeuArgProArgValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATGCCGAGATGAGGCCCCGGAGTGAGGCTCGCTTCGCCAAA 908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New gene Lhd4 encoding a protein capable of delaying plant, useful for controlling flowering time in rice.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Lhd4-related Oryza sativa cDNA sequence SeqID8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minobe Y, Monna L, Kitazawa N, Maehara Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1078 BP; 224 A; 309 C; 316 G; 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (PLAN-) PLANT GENOME CENT CO LTD. (PLAN-) PLANT FUNCTIONAL GENOMICS CO LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 4; SEQ ID NO 8; 124pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADS16786 standard; cDNA; 1078 BP.
                                                                                                                AsnThrileSerAsn-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10-MAR-2003; 2003JP-00063960.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10-MAR-2004; 2004WO-JP003122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5.6e-14
255.00
40.6%
32.7%
24.3%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              growth; gene; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2004-677545/66.
P-PSDB; ADS16787.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO2004081210-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Oryza sativa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      specification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23-SEP-2004.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16-DEC-2004
                                                                                                                119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rice
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADS16786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score:
                                                      원
                                                                                                                à
                                                                                                                                                             a
                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOCCOCCCC SERVICE SERV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This invention relates to a novel DNA, designated Lhd4 and encoding a protein capable of delaying flowering in a plant. The invention is useful for delaying flowering of a plant, which comprises expressing the novel DNA within the cells of a plant, such as rice. The Lhd4 protein enables control of flowering time of a plant, such as rice, thus causing sequence is that of an growth of an excellent variety. The present exemplification of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               216 ATGTCGATGGGACCAGCAGCGGAGAAGGATGTGGCCTGTGCGGCGCCGACGGTGCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               306 GGATTCCCCTTCGTCTTCCCGCCGAGTGCGTGCCAGGGGATCGGCGCCCCCGGCGCCACCG 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          366 GTGCACGAGTTCCAGTTCTTC----GGCAACGACGGCGGCGGCGACGACGAGGAGC 419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120 eresecrescrerresarsacracecececececececececececececececes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |||||||
----CTCACGTTCGACGTCTCCCTCGGC 578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----carceccaceargargar 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -----GluTyrGlnPhePheAlaHisGlyAsnHisHisHisHisHisGlySerAla 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  --- CysProArgLeuMetValSerProIleHisHisHisHisHisHisGlnGluHis 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ---ProAspAsnPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      579 GAACGGCCCGACCTGGACGCCGGGCTCGGCCTCGGCGCGCGGCGGCGGCGCCGCAC----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATCATCGGCAGCCG------CCGTACGACGGCGTCGTGGCGCCCGCCGTCGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----GlyAlaGlyGlyGlnHisMetAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            75 ---HisGluThrAlaAlaAlaGlyAsnSerSerArgLeuThrLeuGluVal----
                                                                                                                                                                                                                                                                                                                                                                                                                                  New gene Lhd4 encoding a protein capable of delaying flowering in plant, useful for controlling flowering time in rice.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ---SerCysGlyLeuCysGlyAlaAsnAsn--
                                                                                                                                                                                                                                                                                            Σ
                                                                                                                                                                                                                                                                                         Yano
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1078 BP; 224 A; 309 C; 317 G; 228 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                         H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         53 Ala------AspTyrProValProPro----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1078
884
119
61
90
                                                                                                                                                                                                                                                                                         Masuda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -----GlnLeuCys-----
                                                                                                                                                                                                                                                                                      Maehara Y,
                                                                                                                                                                                                 PLANT GENOME CENT CO LTD.
PLANT FUNCTIONAL GENOMICS CO LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         65 AspHisArgArgThrTrpThrArgProPhe-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Example 1; SEQ ID NO 5; 124pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (1-1078)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      331 AGGAGGAACACCGGCGCCCCCGG
                                                                                                                                                                                                                                                                                      Kitazawa N,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-723-947-77 (1-187) x ADS16783
                                                                                    10-MAR-2004; 2004WO-JP003122
                                                                                                                                           10-MAR-2003; 2003JP-00063960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2.96e-14
258.00
40.6%
33.1%
24.6%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            276 rerrecreced
                                                                                                                                                                                                                                                                                   Minobe Y, Monna L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MetSerMet---
                                                                                                                                                                                                                                                                                                                                             2004-677545/66.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                              P-PSDB; ADS16784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        32
                                                                                                                                                                                                    PLAN-)
                                                                                                                                                                                                                                (PLAN-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ..
..
```

8 셤 ò g Š q ò 요 8 g ઠે g ò g ò 셤 Ξ

```
This invention relates to a novel DNA, designated Lhd4 and encoding a protein capable of delaying flowering in a plant. The invention is useful for delaying flowering of a plant, which caparises expressing the novel DNA within the cells of a plant, such as rice. The Lhd4 protein enables control of flowering time of a plant, such as rice, thus causing sequence is an Oryza sativa CDNA sequence which is claimed in the specification.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  366 GTGCACGAGTTCCAGTTCTTC-----GGCAACGACGGCGGCGGCGACGACGAGGCGGCGAGAGC 419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ---CATCGCCACGATGATGAT 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     306 GGATTCCCCTTCGTCTTCCCGCCGAGTGCGTGCCAGGGGATCGGCGCCCCCGGCGCCAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120 GTGGCCTGGCTGTTCGATGACTACCCGCCGCCGTCGCCGGTTGCTGCCGCCGCCGCGGATG 479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   80 CATCATCGCCAGCCGCCGTACGACGGCGTCGTGGCGCCCCCGTCGCTGTTCAGGAGGAAC 539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              540 ACCGGCGCGGCGGGCTCACGTTCGACGTCTCCCTCGGCGGACGGCCCGACCTGGACGCC 599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13 --- CysProArgLeuMetValSerProIleHisHisHisHisHisHisGlnGluHis 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ThrTrpThrArgProPheHisGluThrAlaAlaAlaGlyAsnSerSerArgLeuThrLeu 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----GluTyrGlnPhePheAlaHisGlyAsnHisHisHisHisHisGlySerAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----ProAspAsnPheAspHisArgArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              216 ATGTCGATGGGACCAGCCGGAGAAGGATGTGGCCTGTGCGGCGCCGACGGTGGCGGC
               "Lhd4-related Oryza sativa protein SegID3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   --SerCysGlyLeuCysGlyAlaAsnAsn--
                                                                                                                                                                                                                                                                                      flowering
                                                                                                                                                                                                              Yano
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  T; 0 U; 0 Other;
                                                                                                                                                                                                              Masuda H,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1078
79
19 7
76
10
                                                                                                                                                                                                                                                                                   New gene Lhd4 encoding a protein capable of delaying plant, useful for controlling flowering time in rice.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length: .
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----AspTyrProValProProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       --GlnLeuCys---
                                                                                                                                                                                                           Minobe Y, Monna L, Kitazawa N, Maehara Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  223 A; 309 C; 317 G; 229
                                                                                                                                                                               CO LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-723-947-77 (1-187) x ADS16780 (1-1078)
                                                                                                                                                                                                                                                                                                                                  Claim 1; SEQ ID NO 2; 124pp; Japanese.
                                                                                                                                                               (PLAN-) PLANT GENOME CENT CO LTD. (PLAN-) PLANT FUNCTIONAL GENOMICS
                                                                                                     10-MAR-2004; 2004WO-JP003122
                                                                                                                                  10-MAR-2003; 2003JP-00063960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6.92e-14
254.00
40.2%
32.4%
 /*tag= a
/product= '
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         276 TGTTGCTCCCGC
                                                                                                                                                                                                                                         WPI; 2004-677545/66.
P-PSDB; ADS16781.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           53 Ala-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 MetSerMet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity:
                                           WO2004081210-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Alignment Scores:
                                                                         23-SEP-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query, Match:
   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                   ATGTCGATCGGACCAGCAGCAGGAAGGATCTCGCCCTGTGCGGCCCCCGACGGTGGCGGC
                                                                                                                                                                                                          306 GGATTCCCCTTCGTCTTCCCGCCGAGTGCGTGCCAGGGGATCGGCGCCCCGGGCGCCACCG 365
                                                                                                                                                                                                                                                          GTGCACTAGTTCCAGTTCTTC-----GGCAACGACGGCGGCGACGACGAGAGC 419
                                                                                                                                                                                                                                                                                                                              Grescerescretresardachacecececececececececececesars 479
                                                                                                                                                                                                                                                                                                                                                                                                                                                      578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    687 GACGCAGCGAGCTCGATGCCCAAGGAGATGGTGGCCGCCATGGCCGATGATGGGGAAGC 746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ArgGluLysArgLysArgArgArgTyrAspLysGlnIleArgTyrGluSerArgLysAla 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ---CATCGCCACGATGATGAT 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98
                                                                                                                13 ---CysProArgLeuMetValSerProIleHisHisHisHisHisHisGlnGluHis 31
                                                                                                                                                                                                                                       -----TyrGlnPhePheAlaHisGlyAsnHisHisHisHisHisHisGlySerAla 52
                                                                                                                                                                                                                                                                                                   --- ProAspAsnPhe 64
                                                                                                                                                                                                                                                                                                                                                                                                                                             ----CTCACGTTCGACGTCTCCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ---GluAlaIleMetThrIleAspThrGluMet
                                                                                                                                                                                                                                                                                                                                                                                         CATCATCGCCGCCGCCG-----CCGTACGACGCCGTCGTGGCCGCCGCCGTCGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ---GlyAlaGlyGlyGlnHisMetAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAACGGCCCGACCTGGACGCCGGGCTCGGCCTCGGCGGCGGCGGCGGCGGCAC----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HisLeuValGlnProProAlaArgAlaHisIleValProPheTyrGlyGlyAlaPheThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MetValGlyProAlaHisTyrProThrMetGlnGluArgAlaAlaLysValMetArgTyr
                                                         -SerCysGlyLeuCysGlyAlaAsnAsn-
                                                                                                                                                                                                                                                                                                                                                                                                                        ---HisGluThrAlaAlaAlaGlyAsnSerSerArgLeuThrLeuGluVal--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Lhd4; plant flowering; flowering time; efficient development; rice growth; gene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATGCCGAGATGAGGCCCCGAGTGAGGGTCGCTTCGCCAAA 908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TyralaGluLeuArgProArgValAsnGlyArgPheValLys 187
14
                                                                                                                                                                            32 -----sandagin-----
                                                                                                                                                                                                                                                                                                 53 Ala------ASPTYrProValProPro-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lhd4-related Oryza sativa cDNA sequence SeqID2
                                                                                                                                                                                                                                                                                                                                                             65 AspHisArgArgThrTrpThrArgProPhe--
 Gabs:
                            (1-1078)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
216. .989
                                                                                                                                                                                                                                                                                                                                                                                                                                                     531 AGGAGGAACACCGGCGCGCGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BP
                         US-10-723-947-77 (1-187) x ADS16786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AsnThrIleSerAsn-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADS16780 standard; cDNA; 1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
13
                                                                                                                                              276 TGTTGCTCCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Oryza sativa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16-DEC-2004
                                                                                                                                                                                                                                      36
                                                                                                                                                                                                                                                                                                                                                                                                                        75
                                                                                                                                                                                                                                                                    366
                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADS16780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADS16780
                                                      ò
                                                                               a
                                                                                                               ò
                                                                                                                                   . 욥.
                                                                                                                                                                         ò
                                                                                                                                                                                                     g
                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
```

34

22

```
129 IleAspThrGluMetMetValGlyProAlaHisTyrPro------ThrMet 143
                                                  164 LysGlnIleArgTyrGluSerArgLysAlaTyrAlaGluLeuArgProArgValAsnGly 183
                                                                                              ||||||
897 CGCTTCGCCAAA 908
                                                                                                             184 ArgPheValLys 187
 8 6
                      ઠે
                               g
                                           ò
                                                     a
                                                              ò
                                                                          g
                                                                                       ઠે
                                                                                                 g
                                                                                                            ò
```

Search completed: February 23, 2006, 11:04:32 Job time : 502 secs AY48596 Triticum AY485967 Triticum; AY485967 Triticum; Continuation (4 of AY485975 Triticum, AY485976 Triticum, AY485977 Hordeum; AY485978 Hordeum; AY485978 Hordeum; AY485980 Triticum, AY485991 Hordeum; AY485980 Triticum

AK109732 Oryza sat

OM protein

Run on:

Sequence:

```
CQ804432 Sequence
AV114006 Arabidops
AV087632 Arabidops
AV080747 Arabidops
Continuation (216
AC079874 Oryza sat
AE017119 Oryza sat
AE01713260 Lycopersi
Continuation (241
AP004063 Oryza sat
AK100097 Oryza sat
                                                                                                                                                                                                                                                                                                                                                                                                     Continuation (92 o
AP005307 Oryza sat
A50834 Sequence 7
AR099794 Sequence
AY082965 Hordeum v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4Y485969 1792 bp mRNA linear PLN 17-MAR-2004 Iriticum monococcum cultivar G3116 ZCCT1 (VRN2) mRNA, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Magnoliophyta, Lillopsida, Poales, Poaceae, Pooideae, Triticeae, Triticum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Yan, L., Loukolanov, A., Blechl, A., Tranquilli, G., Ramakrishna, W., SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J. Direct Submission
Submitted (20-NOV-2003) Agronomy and Range Science, University of California, One Shields Avenue, Davis, CA 95616, USA
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yan,L., Loukoianov,A., Blechl,A., Tranquilli,G., Ramakrishna,W., SanMiguel,P., Bennetzen,J.L., Echenique,V. and Dubcovsky,J. The Wheat VRNZ Gene Is a Flowering Repressor Down-Regulated by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Science 303 (5664), 1640-1644 (2004)
                                                                                                                                                                                                                                                215
                                                                                                                                                                                                                                                                                                    AP008208 240
                                                                                                                                                                                                                                                                                                                                                                                                          091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                           AY082965
AY082960
                                                                                                                                                                                              AY114006
                                                                                                                                                                                                                                                                                                                                          AK058536
                                                                                                                                                                                                                                                                                                                AP004063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AK109630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AY485969
AY485969.1 GI:45390705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Triticum monococcum
Triticum monococcum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 792)
                                                                                                                                                                                                                                                  19.1 144191
19.1 300029
18.8 1345
18.7 17
                                                                                        2078
                                                                                                                                                                                                                                                                                                                                                                                              1455
                                                                                                                                                                                                                                    1427
                                                                                                                                                                                                                                                110000
                                                                                                                                                                                                                                                                                                                12542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Vernalization
                                                                                                                                                                                                                                                                                                                                                                                                         18.0
18.0
999.5
999.1
97.2
69.7
                                                                                        64.0
                                                                                                                                                       24.8
                                                                                                                                                                               19.8
                                                                                                                                                                                                         19.8
                                                                                                                                                                                                                     19.8
                                                                                                                                                                                                                                                                                                                             18.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                           17.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AY485969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15016992
1043
1043
1018.5
1018.5
730.5
730.5
670.5
590
                                                                                                                             547.5
538
260
                                                                                                                                                                               207
                                                                                                                                                                                                                                                200.5
200.5
200.5
197
195.5
                                                                                                                                                                                                                                                                                                                                                                    191.5
190.5
190.5
188.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                             187.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         187
185.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    183
182.5
182.5
182.5
                                                                                                                                                                                                                                                                                                                                                                                                                                    188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 1
AY485969
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
 Command line parameters:
-MODEL=frame+ p2n.model -DEV=x1h
-Q=/abss/ABSSWEB spool/US1073947/runat_23022006_085357_16179/app_query.fasta_1
-Q=/abss/ABSSWEB spool/US1073947/runat_23022006_085357_16179/app_query.fasta_1
-DB=GenEmbl -OFWT=fastap -SUFFIX=p2n.rge -MINNATCH=0.1 -LOOPCL=0 -LOOPEXT=0
-UNITS=bits -START=1 -END=-1 -MATRIX=blosum62 -TRANS=human40.cdi -LIST=45
-UNITS=bits -START=1 -END=-1 -MATRIX=blosum62 -TRANS=human40.cdi -LIST=45
-OUTFWT=pto -NORM=ext -HEAPSIZE=50 -MINLEN=0 -MAXLEN=2000000000 -HOST=abss07
-USER=USI0723947_@CGN 1 1 4933 @runat 23022006 085357 16179 -NCPU=6 -ICPU=3
-NO NWAP -NEG SCORES=0 -WAIT -DSPBLOCK=100 -LONGLOG -DEV TIMEOUT=120
-WARN TIMEOUT=30 -THREADS=1 -XCAPOP=10 -XCAPEXT=0.5 -FGAPOP=6 -FGAPEXT=7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AY485969 Triticum
AY485963 Triticum
AY485965 Triticum
                                                                                     2006, 10:36:58 ; Search time 4542 Seconds (without alignments) 2340.318 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                       1048
1 MSMSCGLCGANNCPRLMVSP.....YESRKAYAELRPRVNGRFVK 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Description
         GenCore version 5.1.7 (c) 1993 - 2006 Biocceleration Ltd.
                                                           nucleic search, using frame_plus_p2n models
                                                                                                                                                                                                                                                                          5883141 segs, 28421725653 residues
                                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AY485969
AY485963
AY485965
                                                                                                                                                                                                          0.5
7.0
7.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YGAPOP=10 -YGAPEXT=0.5 -DELOP=6 -DELEXT=7
                                                                                                                                                                                                                        , Ygapext
, Fgapext
, Delext
                                                                                                                                                                                                            Xgapext
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ü
                                                                                                                                                                                                                                                                                                                              seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15
15
15
                                                                                                                                          US-10-723-947-77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB
                                                                                                                                                                                                                           ٠.
                                                                                                                                                                                          BLOSUM62
Xgapop 10.0 ,
Ygapop 10.0 ,
Fgapop 6.0 ,
Delop 6.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gb_in: *
gb_env: *
gb_om: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gb_un: *
gb_vi: *
gb_htg: *
gb_pl: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gb_pat:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            792
850
850
                                                                                        February 23,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gb_sts:
                         Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gb_ba:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .
.
                                                                                                                                                                                                                                 Fgapop
Delop
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query
Match 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0
100.0
99.5
                                                                                                                                         Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1048
1048
1043
                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score
```

Jatabase :

Result No.

AY082963 Hordeum v AB018118 Arabidops AY082962 Hordeum v

AY082961 Hordeum

AK058536 Oryza sat

Minimum DB Maximum DB

Searched:

AK109630 Oryza sat AY082958 Hordeum v

AY496442 E AF490474 E AY356370 E

```
1. .850
/gene="VRN2"
/gene="VRN2"
/gene="VRN2"
/note="contains CCT domain similar to Arabidopsis constant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                / rames lation="wsmscglcganncprlmvspihhhhhhdeholcbyofpahgnh
hhhhdgaadypvppppdnpphrtymtrpphetaaagnssrltlevgaggghnahlvo
pparahlvppyggaptntisneaimtidtemmvgpahyptmoeraakvmryrekrkrr
rydkqiryesrkayablrppvngrpvkvpbamaspsspydpsklhlgmfr"
PLN 17-MAR-2004
mRNA, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    156 ATTCATCATCATCATCATCATCATCAGGAGCACCAGCTGTGTGAGTACCAGTTCTTCGCC 215
                                                                                                                        Bukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae, Poodeae, Triticeae, Triticum.

    (bases 1 to 850)

                                                                                                                                                                                                                                                                                             Yan, L., Loukcianov, A., Blechl, A., Tranquilli, G., Ramakrishna, W., SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J. Direct Submission Submitsed (20-NOV-2003) Agronomy and Range Science, University o California, One Shields Avenue, Davis, CA 95616, USA
                                                                                                                                                                                    Yan, L., Loukoianov, A., Blechl, A., Tranquilli, G., Ramakrishna, W., SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J. The Wheat VRN2 Gene Is a Flowering Repressor Down-Regulated by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            96 AIGICCATGICATGGGGTITGTGCGGGGGCGCAACAACTGCCGGGGCCTCATGGICTCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 ProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     276 CCAGACAACTICGACCACCGCAGAACAIGGACCAGACCAITICAIGAAACAGCAGCGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21 IleHisHisHisHisHisHisGluHisGluHisGluLeuCysGluTyrGlnPhePla
AY485963 11near 11near Triticum monococcum cultivar PI355522 ZCCT1 (VRN2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                850
187
0
0
0
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                1. .850
/organism="Triticum monococcum"
                                                                                                                                                                                                                                                 Science 303 (5664), 1640-1644 (2004)
15016992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
/product="ZCCT1"
/protein_id="AAS60235.1"
/db_xref="GI:45390676"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (1-850)
                                                                                                                                                                                                                                                                                                                                                                                                                              /mol_type="mRNA"
/cultivar="P1355522"
/db_xref="taxon:4568"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="winter line
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-723-947-77 (1-187) x AY485963
                                            AY485963
AY485963.1 GI:45390675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8.09e-69
1048.00
100.0%
100.0%
                                                                                            Triticum monococcum
                                                                                                           Triticum monococcum
                                                                                                                                                                                                                                                                                   (bases 1 to 850)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            domains"
                                                                                                                                                                                                                                        Vernalization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match:
DB:
                                            ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                  source
 LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    No.
                                                                                                                                                                                                                                                  JOURNAL
PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ĊDS
                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                       /tränslation="MSMSCGLCGANNCPRLMVSPIHHHHHHHQEHQLCEYQFFAHGNH
HHHHGSADDYPVPPPPDINFDHRTWYRPFHFTAAAGNSSALTLEWGAGGQHMALLVQ
PPARAHIVPFYGGAFTWIISNBAIMTIDTEMMVGPAHYPTMQERAXYMRYREKKRR
RYDKQIRYESRKAYAELRPRVNGRFVKVPEAMASPSSPASPYDPSKLHLGWFR"
                                                                                                                                          note="contains CCT domain similar to Arabidopsis constant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHisLeu 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ValGlnProProAlaArgAlaHisIleValProPheTyrGlyGlyAlaPheThrAsnThr 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CATGGCAACCACCACCACCACCACCACCATGGCTCGGCAGCAGAACTACCCAGTGCCACCGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGAACAGCCAGGCTCACGCTGGAGGTGGGGCGCAGGGGGGCCAACACATGGCTCACCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ProThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLysArgArgArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                576 CGCTATGACAAGCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTCCGGCCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11eHisHisHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyzGlnPhePheAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HisGlyAsnHisHisHisHisHisGlySerAlaAlaAspTyrProValProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGCAGCCACCGGCAAGAGCCCACATCGTGCCATTTTACGGAGGTGCATTCACCAACACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 IleSerAsnGluAlaIleMetThrIleAspThrGluMetMetValGlyProAlaHisTyr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTAGCAATGAAGCAATCATGACTATTGACACAGAGATGATGGTGGGGGCCTGCCCATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ArgTyrAspLysGlnIleArgTyrGluSerArgLysAlaTyrAlaGluLeuArgProArg
                                                                                                                                                                                                                                                                                                                                                    792
187
0
0
0
                                                                                                                                                                                                                                                                                                                                                 Length:
Matches:
Conservative:
Mismatches:
Indels:
   monococcum,
                                                                                                                                                                                       /product="ZCCT1"
/protein_id="AAS60241.1"
/db_xref="G1:45390706"
                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps:
              /mol_type="mRNA"
/cultivar="G3116"
/db_xref="taxon:4568"
/note="winter line"
                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-723-947-77 (1-187) x AY485969 (1-792)
 organism="Triticum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         codon_start=1
                                                                                              gene="VRN2"
                                                                                                                          gene="VRN2"
                                                                                                                                                                                                                                                                                                                                                  7.48e-69
1048.00
100.0%
100.0%
                                                                                                           .737
                                                                                                                                                           domains"
                                                                               . 792
                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                       Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                      Pred. No.:
                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 2
AY485963
                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

oţ

335

275

9

155

ద ò g ò qq g ò g

ò

요

8

```
AY485966 BSO bp mRNA linear PLN 17-MAR-2004
Triticum monococcum cultivar PI573529 ZCCT1 (VRN2) mRNA, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ProThrWetGlnGluArgAlaAlaLysValMetArgTyrArgGluLysArgLysArgArg 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                161 ArgTyrAspLysGln1leArgTyrGluSerArgLysAlaTyrAlaGluLeuArgProArg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ValGlnProProAlaArgAlaHisIleValProPheTyrGlyGlyAlaPheThrAsnThr 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 IleSerAsnGluAlaileMetThrileAspThrGluMetMetValGlyProAlaHisTyr 140
                                                                                                                                                                                                                                                                                                                                                                                   216 CATGGCAACCACCACCACCACCATGGCTCGGCAGCAGCACTACCCAGTGCCACCGCCG 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae, Poolese, Triticae, Triticum.
(boales, Triticae, Triticum.
(bases 1 to 850)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Yan, L., Loukojanov, A., Blechl, A., Tranquilli, G., Ramakrishna, W., SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                             276 CCAGACAACTTCGACCACCACCAGAACATGGACCAGACCATTTCATGAAACAGCAGCGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   81 GlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHisLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    516 CCCACAATGCAGGAGAAGACGGAAGGTGATGAGGTATAGGGAGAAGAGAAGAGGCGG
                                                                                                                                                                                                                                                                                                                                             HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro
                                                                                                                                                                                                                                                                                                                                                                                                                         ProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                576 cectateacaaecaaateceataceagrecagaaaagettaceeteagetrececeacee
                                                                                                                                                                                          MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro
                                                                                                                                                                                                                                                                IleHisHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla
                                                                                                                                                                                                                                                                                                        396 GIGCAGCCACCGGCAAGAGCCCACATCGTGCCATTTCACGGAGGTGCATTCACCAACACT
                                                                                                                                                                                                                              Arierccarercareceerringreceececaacaacraceeceecercareerraceece
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Yan, L., Loukoianov, A., Blechl, A., Tranquilli, G., Ramakrishna SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J. The Wheat VRNZ Gene Is a Flowering Repressor Down-Regulated
                Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Science 303 (5664), 1640-1644 (2004)
                                                                                                                Gaps:
                                                                                                                                                    (1-850)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                636 Grchaceeceerrrerchae 656
                                                                                                                                                  US-10-723-947-77 (1-187) x AY485965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AY485966
AY485966.1 GI:45390690
                  1.9e-68
1043.00
100.0%
99.5%
99.5%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Triticum monococcum
Triticum monococcum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 850)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Vernalization
                                                                        Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15016992
                                                        Percent Similarity:
    Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        141
                                                                                                                                                                                          Н
                                                                                                                                                                                                                              96
                                                                                                                                                                                                                                                                  21
                                                                                                                                                                                                                                                                                                                                                 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
KEYWORDS
SOURCE
ORGANISM
    Alignment 8
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 4
AY485966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                        Score:
                                                                                                                                                                                        ò
                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HHHHGSAADYPVPPPPDNFDHRRTWTRPFHETAAAGNSSRLTLBVGAGGGHMAHLVO
PPARAHIVPFHGGAFTNTISNEAIMTIDTEMMVGPAHYPTMQERAAKVMRYREKRKRR
RYDKQIRYESRKAYAELRPRVNGRFVKVPEAMASPSSPASPYDPSKLHLGWFR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AY485965 850 bp mRNA linear PLN 17-MAR-2004
Triticum monococcum cultivar PI272561 ZCCT1 (VRN2) mRNA, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         constant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'translation="msmscGLCGANNCPRLMVsPIHHHHHHHHQEHQLCEYQFFAHGNH
                                                                                                                                                                                                                              160
                                                                                                                                                                                                                                                                  575
                                                                                                                                                                                                                                                                                                          180
                      ValGlnProProAlaArgAlaHisIleValProPheTyrGlyGlyAlaPheThrAsnThr 120
                                                                                                              455
                                                                                                                                                    140
                                                                                                                                                                      635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta, Peprantophyta, Magnoliophyta, Liliopsida, Poales, Poaceae, Pooideae, Triticeae, Triticeae, Triticeae, I (bases 1 to 850)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ĕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yan,L., Loukoianov,A., Blechl,A., Tranquilli,G., Ramakrishna,W.,
SanMiguel,P., Bennetzen,J.L., Echenique,V. and Dubcovsky,J.
The Wheat VRN2 Gene Is a Flowering Repressor Down-Regulated by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ramakrishna, W.,
GlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHisLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yan, E., Loukolanov, A., Blechl, A., Tranquilli, G., Ramakrishna, W. SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J. Direct Submission
Submitted (20-NOV-2003) Agronomy and Range Science, University California, One Shields Avenue, Davis, CA 95616, USA
                                                                                                                                                                                                                          ProThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLysArgLysArgArg
                                                                                                                                                                                                                                                ArgTyrAspLysGlnIleArgTyrGluSerArgLysAlaTyrAlaGluLeuArgProArg
                                                                                                                                                                                                                                                                                                                             CGCTATGACAAGCAAATCCGATACGAGTCCAGAAAAGCTTACGCTGAGCTCCGGCCACGG
                                                                                                          396 GTGCAGCCACGAAAGAGCCCACATCGTGCCATTTTTACGGAGGTGCATTCACCAACACT
                                                                                                                                                121 IleSerAsnGluAlaIleMetThrIleAspThrGluMetMetValGlyProAlaHisTyr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Arabidopsis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     domain similar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               organism="Triticum monococcum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Science 303 (5664), 1640-1644 (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein_id="AAS60237.1"
db_xref="GI:45390686"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     db_xref="taxon:4568"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /mol_type="mRNA"
/cultivar="P1272561"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'note="winter line"
                                                                                                                                                                                                                                                                                                                                                                                 ValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                       GICAACGGCCGCTTTGTCAAG 656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               96. .737
/gene="VRN2"
/note="contains C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AY485965
AY485965.1 GI:45390685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               codon start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene="VRN2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Triticum monococcum
Triticum monococcum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 (bases 1 to 850)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         domains"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Vernalization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15016992
                                                                        101
                                                                                                                                                                                                                                                                516
                                                                                                                                                                                                                            141
                                                                                                                                                                                                                                                                                                      161
                                                                                                                                                                                                                                                                                                                                             576
                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                         989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 3
AY485965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
```

455

335 100

80

215

9

40

155

20

850 1186 0

575

635

Ramakrishna, W.,

ል

ORIGIN

```
/protein id="AAS60240.1"
/db_xref="G1:45390701"
/translat_ion="WBMSCGLCGANNCPRLMVSPIHHHHHHHQEHQLCEYQFPAHGNH
HHHHGSAADYPVPPPDPDHRTFWTRPFHFTAAAGNSSRLTLEVGAGGQHWAHLVQ
PPARAHIVPFHGGAFTNTISNEAIMTIDTEMMVGPAHYPTMQERAAKWMRYRERKRRR
RYDKQIRYESRKAYAELRPRVNGRFVKVPEAMASPSSPASPYDPSKLHLGWFR"
                                                                            850 bp mRNA linear PLN 17-MAR-2004 monococcum cultivar PI355532 ZCCT1 (VRN2) mRNA, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       note="contains CCT domain similar to Arabidopsis constant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     215
                                                                                                                                                                                                      Tracheophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                          οĘ
                                                                                                                                                                                                                                                                                                                                                          Z (bases 1 to 850)
Yan,L., Loukoianov,A., Blechl,A., Tranquilli,G., Ramakrishna,W., SanMiguel,P., Bennetzen,J.L., Echenique,V. and Dubcoveky,J. Direct Submission
Submitted (100-NOV-2003) Agronomy and Range Science, University of California, One Shields Avenue, Davis, CA 95616, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ramakrishna, W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MetSerMetSerCygGlyLeuCygGlyAlaAsnAsnCygProArgLeuMetValSerPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ል
                                                                                                                                                                                    Triticum monococcum Bukaryothyta; Embryophyta; Tracheog Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Poaceae; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooldeae; Triticaea; Triticum.

1 (bases I to 850)
Yan,L., Loukoianov,A., Blechl,A., Tranquilli,G., Ramakrishna, Yan,L., Loukoianov,A., Echenique,V. and Dubcovsky,J. The Wheat, VRNZ Gene Is a Flowering Repressor Down-Regulated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    850
1186
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'organism="Triticum monococcum'
                                                                                                                                                                                                                                                                                                                             Science 303 (5664), 1640-1644 (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /mol_type="mRNA"
/cultivar="P1355532"
/db_xref="taxon:4568"
/note="winter line"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (1-850)
                 959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product="ZCCT1"
636 GTCAACGGCCGCTTTGTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-723-947-77 (1-187) x AY485968
                                                                                                                                          GI:45390700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene="VRN2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              96. .737
/gene="VRN2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1.9e-68
1043.00
100.0%
99.5%
15
                                                                                                                                                                         Triticum monococcum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               domains"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . .850
                                                                                                                                                                                                                                                                                                                  Vernalization
                                                                                                                          AY485968
AY485968.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity:
Query Match:
                                                                              AY485968
Triticum r
                                                                                                                                                                                                                                                                                                                                                 15016992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -
                                                                                                                        ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No.:
                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
                                           RESULT 5
AY485968
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alignment
                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                 PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                      gene="VRN2"
note="contains CCT domain similar to Arabidopsis constant
                                                                                                                                                                                                                                                                                 /protein_id="AAS60238.1"
/db_xref="GI:45390691"
/translation="MSMSCGLCGANNCPRLMVSPIHHHHHHHQEHQLCEYQFFAHGNH
                                                                                                                                                                                                                                                                                                                           HHHHIGSAADY PVPPPPDNFDIRRTWFR FHETAAAGNSSRLTLEVGAGGGOHMAHLVO
PPARAHI VPFHGGAFTNTI SNEAIMTI DTEMMVGPAHYPTMQERAAKVMR YREKRKRR
RYDKQI RYESRKAYAELR PRVNGRFVKVPEAMASPSSPASPYDPSKLHLGWFR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CATGGCAACCACCACCACCACCACCATGGCTCGGCAGCAGCTACCCAGTGCCACCGCCG 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ccagacarricasccaccacadaacaraaacacaaacarrircaraaacaacaacaacaa 335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GlyAenSerSerargLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHisLeu 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ValGlnProProAlaArgAlaHisIleValProPheTyrGlyGlyAlaPheThrAsnThr 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121 IleSerAsnGluAlaIleMetThrIleAspThrGluMetMetValGlyProAlaHisTyr 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           80
                   ĕ
Direct Submission
Submitted (20-NOV-2003) Agronomy and Range Science, University
California, One Shields Avenue, Davis, CA 95616, USA
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGTCCATGTCATGCGGTTTGTGCGGCGCCCAACAACTGCCCGCGCCTCATGGTCTCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21 IlehishishishishishishisglnGluhisGlnLeuCysGluTyrGlnPhePheAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGCAGCGGCAGCGGAAGAGCCCACATCGTGCCCATTTCACGGAGGTGCATTCACCAACACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                           850
1186
00
00
                                                                                                                                                                                                                                                                                                                                                                                                                        Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                            /organism="Triticum monococcum"
/mol_type="mRNA"
/cultivar="P1573529"
/db_xref="taxon:4568"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-723-947-77 (1-187) x AY485966 (1-850)
                                                                                                                                          'note="winter line"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                     codon_start=1
product="ZCCT1"
                                                                                                                                                                       /gene="VRN2"
96. .737
                                                                                                                                                                                                                                                                                                                                                                                                                     1.9e-68
1043.00
100.0$
99.5$
                                                                                                                                                                                                                                       domains"
                                                                                                                                                          . .850
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                              Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              456
                                                                                                                                                                                                                                                                                                                                                                                                                             ..
0
N
 TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                             Alignment
                                                                                                                                                            gene
                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                            DRIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                            Score:
                                                                                                                                                                                                                                                                                                                                                                                                                             Pred.
```

ద

셤 ઠે

ð

요 ò đ

ò

qq ò 셤

ઠે

В

ò

셤 ò a ò

HHHHHGSAADYPVPPPPDNFDHRTWTRFFHETAAAGNSSRLTLEVGAGGOHMAHLVO PPARAHIVPFHGGAFTNTISNRAIMTIDTEMMYGPAHYPTMGERAKYMRYREKRRR RYDKQIRYESRKAYAELRPRVNGRFVKVPEAMASPSSPASPYDPSKLHLGWFR" RYDKQIRYESRKAYAELRPRVNGRFVKVPEAMASPSSPASPYDPSKLHLGWFR" Alignment Scores: 1039.00 Matches: 185 Best Local Similarity: 100.0\$ Mismatches: 0 Query Match: 15 Gaps: 0	US-10-723-947-77 (1-187) x AY485967 (1-850) Oy	276 81 336 101 101 121 456 456 141 141		ORGANISM Triticum monococcum - Bukaryora, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae; Triticeae; Triticum. REFERENCE I (baees 1 to 847) AUTHORS Yan,L., Loukoianov,A., Blechl,A., Tranquilli,G., Ramakrishna,W., SanMiguel,P., Bennetzen,J.L., Echenique,V. and Dubcovsky,J. TILE The Wheat VRN2 Gene Is a Flowering Repressor Down-Regulated by Vernalization
61 ProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAlaAla 80 276 CCAGACAACTTCGACCACCGCAGAACATGGACCAGACCA	121	Z Z Z	15016992 2 (bases 1 to 850) 2 (bases 1 to 850) Yan, L., Loukoianov, SanMiguel, P., Bennet Direct Submitssion Submitted (20-NOV-20 California, One Shie Location/Qu Location/Qu Ce / Organism="/mol_type="/mol_typ	CDS 96. 737 /gene="VRN2" /note="Contains CCT domain similar to Arabidopsis constant domains" and start=1 /codon start=1 /product="2CCT!" /protein.id="AAS60239.1" /db xref="GI:45390656" /translation="MSMSCGLCGANNCPRLMVSPIHHHHHHQKHQLCEYQFFAHGNH

```
(AY485644 Triticum monococcum phospl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          32444 TIGCCGAIGGAIGCGICCAIGGCIICCICCTIAAAAAICCCCCACCIAAITAAIGICCAIC 32385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           32384 TGACTACACCACTACAAAAAAGTAGCACCATGTAACCATTTCATATATTTCTCACATAA 32325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 32324 ITCTGTTAATTTACGCTGCTCGATTGTTCTCCTGAAAAAGATATACGGGAATGGATCTGG 32265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       32264 AIATTCTTTAATTTTCTATGGAGGCATAGAGTTTGTGTTTTGTATTAGTTGATGCAGAAT 32205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHisLeu 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 32684 CATGGCAACCACCACCACCACCACCATGGCTCGGCAGCAGCAGACTACCCAGTGCCACGCCG
                 32564 GGGAACAGCAGGCTCACGCTGGAGGTGGGCGCAGGCGGCCAACACACATGGCTCACCTA
rGluSerArgLysAlaTyrAlaGluLeuArgProArg
                                                                                                                                                                                                                                                                                                                                                                                                                                             32804 ATGICCATGTCATGCGGTTTGTGCGGCGCCAACAACTGCCCGGCGTCTATGGTCTCGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IleHisHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla
                                                                                                                                                   LOCUS AY485644 Accession AY485644
                                                                                                                                                                                                                                                                                                                                                         418
                                                                                                                                                                                                                                                                                                   Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                               of AY485644 from base 300001 phosphatidylinositol phosph.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ValGlnProProAlaArgAlaHisIle-----
                                                                                                                                                                                                                                                                                                                                                                                                   (1-110000)
                                                                                                                                                                            110000
210000
310000
410000
                                                                               653
                                                      ValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                 US-10-723-947-77 (1-187) x AY485644_3
                                                                       GTCAACGGCCGCTTTGTCAAG
                                                                                                                                                    fragments
                                                                                                                                                                                                                                               of.AY485644
                                                                                                                                                                                                                                                                                                    2.56e-49
816.00
30.7%
30.6%
77.9%
                                                                                                                                                                                        100001
200001
300001
400001
                                                                                                                                                   Sequence split into 5
                                                                                                                                                                                                                                                                                                                              Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                               putative transposase,
                                                                                                                                                                                                                                                 <u>2</u>
                                                                                                                                                               Fragment Name
AA485644 0
AA485644 1
AA485644 2
AA485644 3
AA485644 3
AA485644 3
Continuation (4 of 5
                                                                                                                                                                                                                                                                                          Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          101
                                                      181
                                                                                 633
                                                                                                                                                                                                                                                                                                                                                                                                                               Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    81
  161
                                                                                                           RESULT 8
AY485644 3/c
WPCOMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               109
                                                                                                                                                                                                                                                                                                      Pred. No.:
                                                                                                                                                                                                                                                                                                                     Score:
                         a
                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
    ਨੇ
                                                                                                                                                                                                                                                                                                                   protein_id="AAS60236.1"
/db_xref="GI:45390681"
/translation="MSMSCGSCGANNCPRLMVSPIHHHHHHHGEHQLCEYQFFAHGNH
                                                                                                                                                                                                                                                                                                                                                           HHHHGSAADY PVPPPPDNFDHRTWTR PFHETAAAGNSSRLTLEVGAGGGHMAHL VQP
PARAHI VVPFHGGAFTNTI SNEAIMTI DTEMMYGPAHY PTMQERAAKVMRYREKRKRRR
YDKQI RYESRKAYAELRPRVNGRFVKVPEAMASPSSPASPY DPSKLHLGWFR"
                                                                                                                                                                                                                                                               CCT domain similar to Arabidopsis constant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IleSerAsnGluAlaIleMetThrIleAspThrGluMetMetWalGlyProAlaHisTyr 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ProThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLysArgLysArgArg 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               09
                                                                                 οţ
                                      Yan, L., Loukojanov, A., Blechl, A., Tranquilli, G., Ramakrishna, W. SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J. Direct Submission
Submitted (20-NOV-2003) Agronomy and Range Science, University California, One Shields Avenue, Davis, CA 95616, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     216 CATGGCAAC---CACCACCACCACCATGGCTCGGCAGCAGACTACCCAGTGCCACCGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               273 ccadacaactrcdaccaccacaaacarddaccacaccarrrcardaaacadcadcdaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ValGInProProAlaArgAlaHisIleValProPheTyrGlyGlyAlaPheThrAsnThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGCAGCCACCGGCAAGAGCCCACATCGTGCCATTTCACGGAGGTGCATTCACCAACACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IleHisHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHisLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTAGCAATGAAGCAATCATGACTATTGACACAGAGATGATGGTGGGGGCCTGCCCATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro
                                                                                                                                                                                                                                                                                                                                                                                                                                           847
1
1
1
1
                                                                                                                                                                                                                                                                                                                                                                                                                                           Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                    /organism="Triticum monococcum"
/mol_type="mRNA"
/cultivar="P1277133"
303 (5664), 1640-1644 (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-723-947-77 (1-187) x AY485964 (1-847)
                                                                                                                                                                            db xref="taxon:4568"
'note="winter line"
                                                                                                                                                                                                                                 96. .734
/gene="VRN2"
/note="contains_C
                                                                                                                                                                                                                                                                                            codon_start=1
                                                                                                                                                                                                                      gene="VRN2"
                                                                                                                                                                                                                                                                                                                                                                                                                                         1.23e-66
1018.50
98.9%
98.4%
                           (bases 1 to 847)
                                                                                                                                                                                                                                                                            domains"
                                                                                                                                                                                                       .847
                                                                                                                            1. .847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
Best Local Similarity:
Query Match:
DB:
               15016992
                                                                                                                                                                                                                                                                                                                                                                                                                               Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                            source
JOURNAL
PUBMED
REFERENCE
                                                                   TITLE
JOURNAL
                                                                                                                                                                                                            gene
                                          AUTHORS
                                                                                                                                                                                                                                    CDS
                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ٠ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

32745

. 0

20

32505

109

109

32565

80

32625

9

Sp G

g S g 8

상 임 S G

Dp

\$ g \$

g &

163 ASDLYSGINILE 31064 GACAAGCAAATC 183 GIYAXGPDAVAI 31004 GGCCGCTTTGTC 5 AX485975 ION Trit.cum monoc Cds. ON AY485975	Σ	PUBMED 15016992 REFERENCE 2 (bases 1 to 712) AUTHORS Yan, L., Loukcianov, A., Blechl, A., Tranquilli, G., Ramakrishna, W., SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J. TITLE Direct Submission JOURNAL Submitted (20-NOV-2003) Agronomy and Range Science, University of california, One Shields Avenue, Davis, CA 95616, USA Location/Qualifiers Loration/Qualifiers Jordanism="Triticum monococcum" Anol Pype="MRAN" Ab xref="P127713" Ab xref="P127713" Ab xref="P127713" Ab xref="Taxon:4568" In 712 Sene="VRN2" Sene="VRN2" Joene="VRN2" Acodon = Lart=1 Ab codon = Lart=1 Ab	Alignment Scores: 2.14e-45
32204 TGTATGGGTTGTCAAATCATCATACATATATACTTATTTTTTTT	AATATCTATCTGGAGTCCACACTTTATGGTAATTAATTGACAAAGTTTTGTGAAATGGAC AATATACATACTGGATGGATGCACCCTTTTTCTCATTTATGTGGTCATTATAATTGATT GTTATTTAGTATTTCAATTTATCTTGAGCTAGTTTTGCAAGTCTGTAGCTGTATAAAA	31784 CTGATACTACTCCCCACGATAGCTTAGCGTAGTGGCCGGGTGATCCATCTACCGAGTTCAT 31725 109	1364 TCTGAATGAAAATGGATCATTTTCTAGTTAATTAGAGACCAATTAGATACTTCATAAACA 31305 109

B & B &

g &

g 79

g

9 8
 강 업. 장· 업
 장 업

셤 ਨੇ ුපු ò 요. 장

d ò ద ò 셤 셤 8 엄

ò

g

ò

```
/codon_start=1
/product== "2CCT2"
/product== "2CCT2"
/protein_id="AAS60248.1"
/db_xref==GI:43390734"
/translation="WSWSCGLCGASDCPHHWISPVLOHOEOHWLREYOFFTGGHHHHH
#GAAADYPPEPPEPANCHHCSWTTPPHETAAAGNSSRLTLEVDAGGONMAHLLOPPA
RPRTTIVPPCGAAFSTISNATIMTIDTEWWYGAAHNLTMOEREAKWRYREKKRRC
YDKQIRYESRKAYAELRPRVNGCFVKVPEAAASSSPPASPYDPSKLHLGWFO"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PLN 17-MAR-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LeuValGlnProProAlaArgAlaHis-----IleValProPheTyrGlyGlyAlaPhe 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Triticum turgidum
Triticum turgidum
Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LysArgArgArgTyrAspLysGlnIleArgTyrGluSerArgLysAlaTyrAlaGluLeu 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2078 bp DNA linear PLN 17-MAR-200 turgidum cultivar Langdon ZCCT1-Td (VRN2) gene, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                          89 GTT------CTTCAGCATCAGGAACAACACTGGCTGGCTGCGAGTACCAGTTCTTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21 IleHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AlaGlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       497 AAGAGGGGTGCTATGACAAGCAAATCCGCTACGAGTCCAGAAAGCTTACGCCGAGCTC
                                                                                                                                                                                                                                                                                                                                                                MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro
                                                                                                                                                                                                                                                                                                                                                                                  41 HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ProAsp---AsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ThrAsnThrIleSerAsnGluAlaIleMetThrIleAspThrGluMetMetValGlyPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AlaHisTyrProThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLysArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       437 gecedinarergácgarecagagagagagagecgaaggreargagaracaggaagagage
                                                                                                                                                                                                         712
114
11
7
8
7
                                                                                                                                                                                                       Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                178 ArgProArgValAsnGlyArgPheValLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGCCACGGGTCAATGGCTGCTTTGTCAAG
                                                                                                                                                                                                                                                                                                                              (1-712)
                                                                                                                                                                                                                                                                                                                                US-10-723-947-77 (1-187) x AY485976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GI:45390744
                                                                                                                                                                                                       2.14e-45
730.50
81.6%
75.8%
69.7%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AY485979
AY485979.1
                                                                                                                                                                                                                                           Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AY485979
Triticum t
                                                                                                                                                                                         Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                    53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         138
                                                                                                                                                                                                                                                                                                                                                                  -+
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  557
                                                                                                                                                                                                                                                                           Query Match;
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCUS
DEFINITION
                                                                                                                                                                                                             ..
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 11
AY485979
                                                                                                                                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PLN 17-MAR-2004
mRNA, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             domain similar to. Arabidopsi's constant
                                                                                                                                                        256
                                                                                                                                                                                                                         316
                                                                                                                                                                                                                                                           117
                                                                                                                                                                                                                                                                                            376
                                                                                                                                                                                                                                                                                                                              ThrAsnThrIleSerAsnGluAlaIleMetThrIleAspThrGluMetMetValGlyPro 137
                                                                                                                                                                                                                                                                                                                                                                436
                                                                                                                                                                                                                                                                                                                                                                                                    157
                                                                                                                                                                                                                                                                                                                                                                                                                                      496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LysArgArgArgTyrAspLysGlnIleArgTyrGluSerArgLysAlaTyrAlaGluLeu 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         556
140 CAAGGC---CACCACCACCACCACGACGGCGGGGGGGGACTACCCACGGCACGGCA 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Tracheophyta;
                                                    9
                                                                                                                      79
                                                                                                                                                                                         66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Yan,L., Loukoianov,A., Blechl,A., Tranquilli,G., Ramakrishna,W., SanMiguel,P., Bennetzen,J.L., Echenique,V. and Dubcovsky,J. The Wheat VRN2 Gene Is a Flowering Repressor Down-Regulated by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ramakrishna, W.,
                                                                                                                                          AlaGlyAsnSerArgLeuThrLeuGluValGlyAlaGlyGlnHisMetAlaHis
                                                                                                                                                                                                              GCAGGGAACAGCAGCAGACTCACGCTGGAGGTAGATGCAGGCGGCCAAAAACATGGCTCAC
                                                                                                                                                                                                                                                           LeuValGlnProProAlaArgAlaHis-----IleValProPheTyrGlyGlyAlaPhe
                                                                                                                                                                                                                                                                             CTGCTGCAGCCACCGGCACGAGAACCACCATCGTGCCATTCTCTGCGGGGCTGCATTC
                                                                                                                                                                                                                                                                                                                                                                AlaHisTyrProThrMetGlnGluArgAlaAlaLysValMetArgTyrArgGluLysArg
                                                                                                                      ProAsp---AsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCCATAATCTGACGATGCAGGAGAGAGGCGAAAGGTGATGAGGTACAGGGAGAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGAGGGGGTGCTATGACAAGCAAATCCGCTACGAGTCCAGAAAAGCTTACGCCGAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  University
                                                  41 HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Triticum monococcum
Eukaryora, Viridiplantae, Streptophyta; Embryophyta; Trach
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Pooideae; Triticeae; Triticum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Blechl, A., Tranquilli, G., Ramakrish
1,J.L., Echenique, V. and Dubcovsky, J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Yan, L., Loukoianov, A., Blechl, A., Tranquilli, G., Rame SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcon Direct Submission
Submitted (20-NOV-2003) Agronomy and Range Science, I California, One Shields Avenue, Davis, CA 95616, USA Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               bp mRNA linear
PI272561 ZCCT2 (VRN2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Triticum monococcum'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ArgProArgValAsnGlyArgPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGCCACGGGTCAATGGCTGCTTTGTCAAG 586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Science 303 (5664), 1640-1644 (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /mol_type="mRNA"
/cultivar="PI272561"
/db_xref="taxon:4568"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AY485976 712
Triticum monococcum cultivar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="VRN2"
/note="contains CCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'note="winter line"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GI:45390733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene="VRN2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Triticum monococcum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 712)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 712)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Vernalization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AY485976.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15016992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AY485976
     GTT-
                                                                                                                                                                                         80
                 89
                                                                                                                      61
                                                                                                                                                       197
                                                                                                                                                                                                                                                           100
                                                                                                                                                                                                                                                                                            317
                                                                                                                                                                                                                                                                                                                                118
                                                                                                                                                                                                                                                                                                                                                                377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         497
                                                                                                                                                                                                                         257
                                                                                                                                                                                                                                                                                                                                                                                                    138
                                                                                                                                                                                                                                                                                                                                                                                                                                    437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AY485976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
```

137 436 157 496

196

79

9

88 40 256

66

	07	435 TIGCCGAIGGGICCCIGGCITCCICTIAAAAAICCCCACCIAAITIAIGICCAIC	Oy 109 109	Db 495 TATACCCACTACAAAAAATAGCACCATGTAACCATCTCATATATCTGTCACATAATTCT 554	ογ 109 109	Db 555 GTTAATGTACGCTGCTCAATTGTTCTCCTGAAAAAGATATGCGGGAATGGATCTTGATAT 614	Ογ 109 109	Db 615 TCTTTAATTTTCTATGGAGGCATATATAGAGTTTGTGTTTTGTATTAGTTGATGCAGAAT 674	Qy 109 109	Db 675 TGTATGGGTTGTCAAATCATGAGTCATACATATAAACTTATTTCATTTTATTTGACCAAC 734	Qy 109 109	Db 735 AACAAGGIAAICAGICAIACAIGCAIACIGAAAAIIIGACIIGIGIICAAIAACIAAC	QY 109	Db 795 ACTCGACCGGCACAGCTGGGGGAAGACTTTAATCAAGCTGCTAGCTA	Qy 109 109	Db 855 TAACATATCTCTTTATGGGATCAAGCAATACATATGCGCTCAATTCTCAACTTGTCAATA 914	ογ 109 109	Db 915 TCTATCTGGAGTCCACACTTTATGGTAATTAATTGACAAAGTTTTGTGAAATGGACAATA 974	Qy 109 109	Db 975 TACATACTGGATCGATGCACCCTTTTTCTCATTTATGTGGTCATTATGAATTTGATTGT 1034	109	Db 1035 TAITTAGTAITTCAATTITATCTTGAGCTAGTTTTGCAAGTCTGTAGCTCATATATAACT 1094	Ογ 109 109	Db 1095 GATACTACTCCCCACGATAGCTTGCGTAGTGGCCGGGTGATCGATC	ογ 109 109	Db 1155 AACTGATCGAGATCGGGTCCAAAAAGAACAAACCGATACAAAATGGAAAGAAGAAGATCCTT 1214	Ογ 109 109	Db 1215 GTTTAGTTTAGTTTGCATCAGAAAATTGCCTAATTAGTTACTTGCTATCAATCTTTTGAAC 1274	Ογ 109 109	Db 1275 ATGGCATGTTCACCCCAAACGGACTCAGATCACAATTATTGATGAAGTTACGCCTTTTAA 1334	Qy 109 109	Db 1335 AAACTCATAAAACTGTACATACATGTACAGGGCTACACATGTACATAATACACATAAT 1394	Qy 109 109	Db 1395 TAAAACGTATATTCGTAGACCAATTGTTTTGGACGGTGCACATCTTTGAAAAAAATGCC 1454	ΟΥ 109 109	Db 1455 AGAGGAGTTGTTAGCTTCCACTGTCCAGAAATAGAATAAGAATCAAGTGCATCTCTG 1514	
Dooridges. Pritings	REFERENCE 1 (bases 1 to 2018)	<pre>SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J.</pre>	TITLE The Wheat VRN2 Gene Is a Flowering Repressor Down-Regulated by Vernalization	JOURNAL Science 303 (5664), 1640-1644 (2004)		ADINORS INT., LOUKOIGHOV, A., BIEGHI, A., IKANGULLI, G., KANGKILSHNA, W., SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J.	ΑĽ		source 12078 /organism="Triticum turgidum"	/mol_type="genomic DNA" /cultivar="Langdon"	1	/note="winter line; tetraploid genome A" gene <96>1965	/gene="VRN2" mRNA join(<96. 401,1651>1965)	/gene="vknz" /product="ZCCT1-Td"	Join(Mb401,18511985) /gene="VRN2"	/codon_start=1 /product="zCCT1-Td"	/protein_id="AAS60251.1" /db_xref="G1:45390745"	/translation="MSMSCGLCGANNCPRLMVSPIHHRHHHQEHQLRQHQFFAQGNH HHHHPVPLPPANFDHSRTWTTPFHETAAAGNSSRLTLEVGAGGRPMAHLVQPPARAHI	VPFYGGAFTNTISNEAIMTIDTEMMYGPAHYPTMQERAAKVMRYREKRKRRRYDKQIR YESRKAYAELRPRVNGCFVKVPEAMASPSSPASPYDPSKLHLGWFR"	ORIGIN	ent Scores: 1.93e-40 Length:	670.50 28.3%	: 27.8% Mismacches: 64.0% Indels:	Gaps:	US-10-723-947-77 (1-187) x AY485979 (1-2078)	Qy 1 MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro 20	אס אומורלאומורטאומירטאירטאירטאירטאירטאירטאירטאירטאירטאירטא	Cy 2.1 1ch18h18h18h18h18h18ch1h18ch1h18ch1h1ycchhracha 40	130 All CAICALCGCATCALCACATCAGGGGGGCACCAGGTGAGGGTGAGGTGA	41 HISGIYASHHISHISHISHISGIYSGIASIAAAAAAASDIYIFIOVAIFIOFIOFIO	218 CARGGCARCCACCACCACCACCACCACCACCACCACCACCACCAC	61 ProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAlaAla	255 CCAGCCAACTTCGACCATAGCAGAACATGGACCACCATTTCATGAAACAGCAGCTGCA	81 GlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHisLeu	315 GGGAACAGCAGGCTCACGCTGGAGGTGGGCGAGGCGGCCGACCCATGGCTCACCTA	101 ValGlnProProAlaArgAlaHisIle	DD 3/5 GIGCAGCCACGGCAAGAGCCCACAICGIAAGIACIACGCIIAAIIGIIICAICIC 454

```
PAPPRATIVPFCESAFASTISNATIMTIDTEMNVGPAYNPTMQEREAKVMRYREKRKR
RRYDKQIRYESRKAYAELRPRVNGRFAKVPEAVVSPSPPTSPHDPSKLHLGWF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         990 AIGITAATTCCTTGACAAGTTTGTGAAGTGGAAAATATATTTACTTTATCAATGCACCT 1049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1050 ACTCTCATTTTATGTGGTCATTTATGAATTTTATTAATTTTCTGTTGAGCTAGTTTTGTA 1109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1170 ATCGATCTACCTAGTTCATAAACTTATCGAGATCAGGTCCAAAACAGACCAAAACCTCAC 1229
                                                                                                                                                                                                                                                                336 ATGTCCATGTCATGTGGGTTTGTGCGGCGCCAACCAGCGCGTACCACATGATGTCGCCC 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   570 CCAGAGAACAGCACCAGGCTCACACGGGAGGTGGACGCAGGCGGCCAACACATGGCTCAC 629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   330 CTGCTGCAGCCACCGGCGCCGCCAAGAGCCACCATCGTGAGTAGTACTACTGCTTAATTT
                                                                                                                                                                                                                                                                                                                 21 IleHisHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla
                                                                                                                                                                                                                                                                                                                                                  41 HisGlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyr---ProValProPro
                                                                                                                                                                                                                                                                                                                                                                                                           60 ProProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              80 AlaGlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyHisMetAlaHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       690 ITCTAICTTGCCGAICGAIGGGACCIGCTAACAAAAICACACTIICTTAATTICCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10 TATTCTGGTCGATTGTAATTTACCAAGGCAGAAAGCTTGTATTTTGTATCAGTTGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 370 CAAGAATGGGCGCTCACGTCATCATCGCACATACTATATACTTATTTCATTTTATTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      930 CTAACAAGGTAACTAGTTAATTCCTTTATGGGGTCAAGCAATACATATGTGCACGCCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1110 IGCTTATAGCTCATATATAACTGATACTACTCCCCATAATTTTTCCGTAGTGGTCGGGTG
                                                                                                                                                                                                                                              MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro
                                                                                   Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                           Gaps:
                                                                                                                                                                                                           (1-1985)
                                                                                                                                                                                                           US-10-723-947-77 (1-187) x AY485977
                                                                                   1.67e-34
590.00
29.6%
27.9%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LeuValGlnProProAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  105 -----
                                                                                                                      Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     105
                                                                     Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      105
                                                                                                                                                       Query Match:
DB:
                                                                                         Pred. No.:
                                                                                                       Score:
                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                ď
                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              엄
                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                     1634
                                                                                                                                                        1694
                                                                                                                                                                                                             AY485977 1985 bp DNA linear PLN 17-MAR-2004
Hordeum vulgare cultivar Dairokkaku ZCCT-Ha (VRN2) gene, partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /protein_id="AAS60249.1"
/db_xref="G1:45390738"
/translation="MSSGCGCGASNCAYHWMSPVLLHHHHGEHPLHEYQFFAQGHH
HHHSAAADYPPPPPPPPPDNCHHRSWTTPFHETAAPENSTRLTREVDAGGQHMAHLLQP
                  515 AATGAAAATGGATCATTTTCTAGTTAATTAGAGACCAATTAGATACTTCATAAACAGGGG 1574
                                                                                                                                                                                                                                                                                    GCAAATCAGATACGAGTCCAGAAAAGCTTACGCTGAGCTTCGGCCACGGGTCAACGGCTG 1874
                                                                                                                                                                                         144
                                                                                                                                                                                                                                                              164
                                                      109
                                                                                                                        124
                                                                                                                                                                                                                                                                                                                                  sGlnileArgTyrGluSerArgLysAlaTyrAlaGluLeuArgProArgValAsnGlyAr 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae,
Pooideae, Triticeae, Hordeum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  University of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yan, L., Loukoianov, A., Blechl, A., Tranquilli, G., Ramakrishna, W., SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J. Direct Submission Submitted (20-NOV-2003) Agronomy and Range Science, University of California, One Shields Avenue, Davis, CA 95616, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Yan, D., Loukolanov, A., Blechl, A., Tranquilli, G., Ramakrishna, W., SanMiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J. The Wheat VRN2 Gene Is a Flowering Repressor Down-Regulated by
                                                                                                                                          .635 TCCTCTTGATGTTCAGGTGCCATTTTACGGAGGTGCATTCACCAACACTATTAGCAATGA
                                                                                                                                                                                      uAlaIleMetThrIleAspThrGluMetMetValGlyProAlaHisTyrProThrMetGl
                                                                                   1575 AGTATCAAGTACGTATCTGCTACCCTAAGAAAGTACATAACTGCGATCTTATGATTATTT
                                                                                                                                                                                                                                                              nGluArgAlaAlaLysValMetArgTyrArgGluLysArgLysArgArgTyrAspLy
                                                                                                                        ------ValProPheTyrGlyGlyAlaPheThrAsnThr1leSerAsnGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          oin(<336. .665,1677. .>1985)
gene="VRN2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               oin(336. .665,1677. .>1985)
gene="VRN2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Vernalization
Science 303 (5664), 1640-1644 (2004)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Organism="Hordeum vulgare"
|mol type="genomic DNA"
|cultivar="Dairokkaku"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="taxon:4513"
/note="winter barley"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               product="ZCCT-Ha"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      product="ZCCT-Ha"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GI:45390737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             :336. .>1985
/qene="VRN2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 1985)
                                                                                                                                                                                                                                                                                                                                                                                                                                      1875 CTTTGTCAAG 1884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .. .1985
                                                                                                                                                                                                                                                                                                                                                                                                       184 gPheValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hordeum vulgare
Hordeum vulgare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AY485977.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AY485977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AY485977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15016992
                                                                                                                      110
                                                                                                                                                                                                                                                              144
                                                                                                                                                                                                                                                                                               1755
                                                                                                                                                                                                                                                                                                                                                                    1815
                                                  109
                                                                                                                                                                                       124
                                                                                                                                                                                                                            1695
                                                                                                                                                                                                                                                                                                                                    164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 12
AY485977
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SCO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
              셤
                                                                                a
                                                                                                                                                   유
                                                                                                                                                                                      Š
                                                                                                                                                                                                                        임
                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                   용
                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                 ò
                                                                                                                    8
                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                       8
```

689

749

105

105

105

929

105 989

105

455

29

40

20

509

79

569

66

1169

105

105

JOURNAL Submitted (20-NOV-2003) Agronomy and Range Science, University of California, One Shields Avenue, Davis, CA 95616, USA Location/Qualifiers Location/Qualifiers 12064 / Organism="Hordeum vulgare" //mol type="genomic DNA" //mol type="genomic DNA" //db xxef="taxon.4513" //db xxef="taxon.4513" //db xxef="taxon.4513" //dc ->2064 //dc ->2064 //dc ->2064 //dc ->2064	/ gender = "XCCT-Hb" CDS	ignment Scor ed. No.: ore: rrcent Simila st Local Sin ery Match: : -10-723-947- -10-723-947- 21	H18G1yASH118H18H18H18H18H18H18H18H18H18H18H18H18	106
Qy 105	109	Oy 109 Db 1590 TATACTTCATAAACAAGGAATATCAAGTACATATCTGCTACCCACAGAAAAGTACACCT 1649 Oy 110 L650 TATGACTATTTTCTTCTTGTATGTTCAGGTGCCATTCTGCGAGAGTGCATTCGCCAGCACT 1709 Oy 121 IleSerAsnGluAlaileMetThrIleAspThrGluMetMetValGlyProAlaHisTyr 140 Db 1710 ATTAGCAACGCAACGATCATGACTATTGATACAGAATGATGGTGGGGCCTGCCT	OY 181 ValAsnGlyArgPheValLys 187 Db 1890 GTCAATGGCCGTTTGCCAAG 1910 RESULT 13 AY485978 LOCUS AY485978 ACCESSION AY485978.1 GI:45390740 KERNONS SOURCE ORGANISM Hordeum vulgare CRGANISM Hordeum vulgare CRGANISM Hordeum vulgare ORGANISM HORDEN VULGUBLINGEN HORDEN ORGANISM HORDEN HORDEN HORDEN HORDEN ORGANISM HORDEN	AUTHORS Yan, L. Loukoianov, A., Blechl, A., Tranquilli, G., Ramakrishna, W., AUTHORS Yan, L., Loukoianov, A., Bennetzen, J.L., Echenique, V. and Dubcovsky, J. TITLE The Wheat VRN2 Gene Is a Flowering Repressor Down-Regulated by Vernalization JOURNAL Science 303 (5664), 1640-1644 (2004) FURNED STOIGS92 2 (bases 1 to 2064) REFERENCE 2 (bases 1 to 2064) AUTHORS Yan, L., Loukoianov, A., Blechl, A., Tranquilli, G., Ramakrishna, W., Sanmiguel, P., Bennetzen, J.L., Echenique, V. and Dubcovsky, J.

WPCOMMENT Sequence	Frac AY46	AY48 AY48	AY48 AY48	putative	Alignment	Score:	Best Loca	Query Mat DB:	US-10-723		ις.		is		is .		isi		iń		15		iii				r.		6		īci		ιά		ù
WP			ć	3 04	Al	SC	a a	že B	Sn	ò	đ	ò	면	ò	д	ò	đ	ò	qq	ð	đ	ò	đ	ð	qq	ò	đ	ò	셤	ò	dΩ	ð	qq	δ	ପ୍ର
-			•							··																							<u> </u>		
1016	106	1076	106	1136	106	1196	106	1256	106	1316	106	1376	106	1436	. 106	1496	108	1556	108	1616	108	1676	108	1736	123	1796	143	1856	163	1916	. 183	1976			
AAGACTGGATGCTCAGATCATCAGTCACACATACTATATTTATT		TAACAAGGTAATCAGTTAATTCCTTTATGGGGTCAAGCAACATATGTCCACGCCTTCATG		TTAATTCCTTGGCAGAGTTTGTGAAATAGAAGATATATAT		TCTTTCTCATTTTATGTGGTCATTTAAGAATTTGAATGCTATTTTGTATTTAAATTTTCT		CTTGAGCTAGTGTGTAAGCTTATAGCTCATATAACTGATACTACTCCCCATATTGCTT		CCATAGTGGCCGGGTGATTGATCTACCGAGTTCATGAAACTGATCAAGATCAGGTCCAAA		ACAGGCCAAAACCTCACGAAATGGAATTACGATCCTTGTTTAATTAGTTTGCATCAGGAA		ATTGGCTACTTAATTACTTGCTACCAATCTTATGAAGATGGCATGTTTCCTCACAAATGG		ATCCAGCTCACAATTTTTGGTGAAGTTAAACATTTTTTAGCAATTCATAAAAGGTGCATA		GATGTACAGGGCTACACGTACACGCACATAATACGCCTAGTTAAAACATATATGCATA		GAGCAATTGAGTTTGGACAATGCGCTTCTTTGGACATAATGGCCCGGGAAATTGTTCTT		TCCATTGTCTAAAAACATAGAACAGTTAGAATCAAGTGCACCACTGAATGAGAATGGGTC		AATTTTTGGTTAACGAGAGACCAACTATACGTTATAAACACTGTACTACTCTCACCATTG		TTTCCTCCTCGATGTTCCAGGTGCATTCCGCCGGAGTGCATTCACCAACACTATTAGCAA		cgcaacgatcargactarrigaracagagargargacgagacreccraragrecaacgar		GCAGGAAAGAGAAGCAAAGGTGATGAGGTACAGGGAGAAGAGGAAGAAGAGCGCGCTATGA		CAAGCAAATCCGCTACGAGTCCAGAAAAGCTTACGCCGAGCTTAGGCCACGGGTCAACGG		CCGCTTTGTCAAG 1989	
957	106	1017	106	1077	106	1137	106	1197	106	1257	106	1317	106	1377	106	1437	107	1497	108	1557	108	1617	108	1677	109	1737	123	1797	143	1857	163	1917	183	1977	RESULT 14 AY485644_2/c
qa	'n	qa	ò	qa	ò	qa	ò	Q Q	ò	qa	ò	qg	δλ	qo	ολ	qa	ò	qa	ò	đ	6y	qa	ò	qa	ò	qa	8	qa	ò	qq	ò	qa	ζō	qa	RESUL.

occum phospt.			20 55577	40 .	60 55469	79 55409	99 55349	106 55289	90	55229	106	55169	109	55109	109	55049	109	54989	109	54929	109	54869
eplit into 5 fragments LOCUS AY485644 Accession AY485644 ent Name Begin End 644 0 110000 1 210000 644 2 200001 310000 644 3 300001 418000 644 4 4 400001 438829 on (3 of 5) of AY485644 from base 200001 (AY485644 Triticum monococcum transposase, phosphatidylinositol phosph.	tγ	77 (1-187) x AY485644_2 (1-110000)	MetSerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArgLeuMetValSsrPro : 	IleHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAla	HisolyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro (AsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAla 	AlaGlyAenSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlyGlhHisMetAlaHis S 	, ,	C.G.G.C.A.C.G.C.C.G.C.G.C.G.C.G.C.G.C.G.	TTCCAGCTCTTGCCGATCGCTGGGGGCCTCCTTGTAACAAAAGTTCCCTTTTACGTAATCT		CCATCTACTCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	Alahi 811e	TAGGGCCATGTAACCAGGTCATATATCTGTCACATAATTCTGTTAATTTATGCTGGTCAA		TTATAATCTCCCAAGGCAGAAAGTTTGTGTTTTGTATCAGTTGATGAACAAGAATGGGAA		CTCACATCATCAGTTACACATACATACTTATTTCATTTTATTTGACTAACAÄGGTAATCA !		GTTAATTCCTTTATGGGAACAAGCAATACATATGTCCACGCCTTCATGTTAATTCCTTGA		Caaagitiigigaaaiggacaaiaiataiaciggaicaaigcacccictiicccaiitiai
WhenT Tuence si Fragment AY48564 AY48564 AY48564 AY48564 AY48564 Inuation	Alignment Scores: Pred. No.: Score: Percent Similarity: Best Local Similarity Query Match: DB:	0-723-947-	55636	21 55576	41	6 6 546	80 55408	10	3348 106	55288	106	55228	107	55168	109	55108	109	55048	109	54988	109	54928
WPCOMME Seque Fr Fr AY AY AY AY Continu	Alignmen Pred. Mc Score: Percent Best Loc Query Mi	US-10	S G	<u>ک</u> ۾	\ \delta \ \frac{1}{2}	b ox	& A	ठे त	3 &	q	δ	qq	δ	q	70	qq	λΌ	qq	ð	qu	δ	qq

REFERENCE 1 (bases 1 to 1790) AUTHORS Yan,L., Loukoianov,A., Blechl,A., Tranquilli,G., Ramakrishna,W., SanMiguel,P., Bennetzen,J.L., Echenique,V. and Dubcovsky,J. TITLE The Wheat VRN2 Gene Is a Flowering Repressor Down-Regulated by JOURNAL Science 303 (5664), 1640-1644 (2004) PUBMED 15016992 REFREENCE 2 (bases 1 to 1790) AUTHORS Yan,L., Loukoianov,A., Blechl,A., Tranquilli,G., Ramakrishna,W., SanMiguel,P., Bennetzen,J.L., Echenique,V. and Dubcovsky,J.	JOURNAL Submitted (20-NOV-2003) Agronomy and Range Science, University of California, One Shields Avenue, Davis, CA 95616, USA Location/Qualifiers 10.1790 1.1790	/note="winter line; tetraploid genome A" <291745 /gene="VRN2" /product="X20.14311745) /product="X20.272-Td" /gene="VRN2" /gradoute="X20.272-Td" /grado	ignment Scores: ed. No.:	Oy 1 MetSerMetSerCysGlyJeuCysGlyAlaAsnAsnCysProArgLeuMetValSerPro 20 Db 29 ArGCCCATGTTGTGCGGCGCAGCGAGCTGCCCCACCACATGTTCTCGCCC Oy 21 IleHisHisHisHisHisHisHisHisHisHisHisHisHisH	Oy 61 ProAspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlanla 79
OY 109 Db 54868 GTGGTCATTTATGAATTTTATATTTTATATTTTAAATTTTCTCTTAAGCTTGTTTTG 54809 OY 109		QY 109 109 109 Db 54568 ATTGTTGACGGAGTTAAACATTTTTAGCAATTCATAAAACATGCACAGATGTACAGGGC 54509 QY 109	1 TAAGAGACCAACTGIACTTCATAAACAGGAAATATCATGTACATATCTGCAACCCACAGG 5 1	Oy 134 MetValGlyProAlaHisTyrProThrMetGlnGluArgAlaAlaAsaysValMetArgTyr 153	AY485980 LOCUS AY485980 LOCUS AY485980 AY485980 DEFINITION Triticum turgidum cultivar Langdon ZCCT2-Td (VRNZ) gene, complete cds. ACCESION AY485980 AY48590 AY485980

106 07 1517 0 0 1517 0 0 1517 0 0 1517 0 0 1517 0 0 1517 0 0 1517 0 0 1517 0 0 1517 0 0 1517 0 0 1517 0 0 0 1517 0 0 0 1517 0 0 0 0 0 0 0 0 0	g G		1457
437 CCATCHACTCCCCCCCCCCCCCCCCCCCCCTCAAAAAAACTTAACCCATCAACAA	ò	106 106	ים די די
10	Ор	CCATCTACTCCCCCCCCCCCCCCCCGGCATCTCAAAAAAAGTTAGGGCCATGTAACC	1517
497 AGCICAMATATCOCTACATCACTACATCACCACCACCACACCAC	ò	-AlaHisile	158
109 1637 1638 1639 1637 1638 1639 1	д	AGCICATATATCTGTCACGTAATTCTGTTAATTTATGCTGGTTGAATATAATCTCCCAAG	9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
109 109	ò		0 17
109 109	q	GCAGAGTGTTTGTGTTTTGTATCAGTTGATGCACAAGAATGGGGCACTCACATCATCAGTT	7637
517 ACCATACATRATATATATATATATATACAGGGGGGGGGGG	È		Search completed: February 23
109	q	ACACATACATATTTATTTGACTAACAAGGTAATCAGTTAATTCCTTTATG	JOD Cime : 4563 secs
677 GGAACAAGCAATACATATGTCCACGCCTTCATGTTAATTCCTTGACAAAGTTTGTAAAAT 109 109 109 109 109 109 109 10	ò		
109 109 109 109 109 100 100 101 101 102 103 104 105 107 108 109 109 109 109 109 109 109	gg	GGAACAAGCAATACATATGTCCACGCCTTCATGTTAATTCCTTGACAAAGTTTGTGAAAT	
337 GGACAATATATACTGGATCAGTGCACCATCTTTTCATTTTATGTGGTCATTTATGAA 109	ò		
109 TITTAGTGCTATTTTGTATTTAAATTTTCTCTTAAGCTTGTTTTGTAAGCTTATAGTC 109 109 TAGTTCATAAACAGATACTACTCCCCATAATTGCTTCCGTAGTGGCCGGGTGATCTACC 109 TAGAGTTCATAAAACTGATCCACAATCAGAAATTGCTTCCGTAGTGGCCGGGTGATCTACCAA 109 TAGAGTTCATAAAAACTGATCCACAAATCAGAAATTGCTTCCAAAACCTCACGAAATAGAAA 109 TAGAGTTCATAAAAACTGATCCACAAATCAGAAATTGCTACAAATTGCTTACAA 109 TAGACATTTTTAGCAATTCATAAAACTGATCCACAAATTGCTACAAATTGCTTCAAATTGCTTCAAATTGCTTCAAATTGCTTCAAATTGCTTCAAATTGCTTCAAATTGCTTCAAATTGCTTCAAATTGCTTCAAATTGCTTCAAATTGCTTCAAATTGCTTCTTCTTCTTCTTCAAATTGCTTCTTCTTCTTCTTCTTCTTCTTCTTTCT	QQ	GGACAATATATATATGTGGATCAGTGCACCATCTTTTTCATTTTATGTGGTCATTTATGAA	
197 TITTAGTGCTATTTCTATAAATTTTCTCTTAAGCTTGTTTTGTAAGCTTATAGCTC 109	ò		
109 109 109 109 109 109 109 109 109 109	qα	TTTTAGTGCTATTTTGTATTTTAAAATTTTTCTCTTAAGCTTGTTTTGTAAGCTTATAGCTC	
857 AAGTATAACAGATACTACCCCATAATTGCTTCCGTAGTGGCCGGGTGATCAATCTTACC	ò		
109 110 110 110 1110 1110 1110 1110 111	qq	AAGTATAACAGATACTACTCCCCATAATTGCTTCCGTAGTGGCCGGGTGATCAATCTACC	
917 GAGTICATAAAACTGATCGAAATCCAAAACAGACCAAAACCTCACGAAATAGAAA 109	ò		
109	qq	GAGTTCATAAAACTGATCGAAATCAGATCCAAAACCAGACCAAAACCTCACGAAATAGAAA	
977 CAAGATCCTTGTTTAATTAGTTTGCACCAGGAAATTGCCTACTTAATTACTTTCTATCAA 109	ολ		
1097 TCTTATGAAGATGGTATGTTTCTCACATATGGTGATCCAGATCACAATTGTTGACGGAGT 109	QQ	CAAGAICCTIGITIAAITAGITIGCACCAGGAAAITGCCTACTIAAITACTTICTAICAA	
1037 TCTTATGAAGATGGTATGTTTCTACATATGGTGATCCAGATCACAATTGTTGACGGGGT 109	· &		
1097 TAAACATTTTTAGCAATTCATAAAACCGTGCACAGATGTACAGGGCTACGCGTATGCACA .109	qq	TCTTATGAAGATGGTATGTTTCTCACATATGGTGATCCAGATCACAATTGTTGACGGAGT	
1097 TAAACATTTTTAGCAATTCATAAAACCGTGCACAGATGTACAGGGCTACGCGTATGCACA .109	ò		
109	οg	TAAACATTTTTAGCAATTCATAAAACCGTGCACAGATGTACAGGGCTACGCGTATGCACA	
1157 TACATAATACACCTAATTAAAACATATTCATAGAGCGATTGGAGTTTGGACTGTGCGCT 109	ò		
109	Q	TACATAATACACCTAATTAAAACATATATTCATAGAGCGATTGGAGTTTGGACTGTGCGCT	
1217 TCTTTGGACACAAAGGCCCGGGAAGTTGTTCTTCCATTGTCTACAAAAATAGAACAGT 109	ò		
109	qq	TCTTTGGACACAAAAGGCCCGGGAAGTTGTTCTTTCCATTGTCTAGAAAATAGAACAGT	
1277 TACAATCAAGTGCACCACTGAATGAAAATGGGTCAATTCTGGTTAATAAGAGACCAACTG 109	ò		
1337 TACTTCATAAACAGGAATATCATGTACATATCTGCAACCCACAGGAAAAGTACAGAACT 110	QQ	TACAATCAAGTGCACCACTGAATGAAAATGGGTCAATTCTGGTTAATAAGAGACCAACTG	
1337 TACTTCATAAACAGGGAATATCATGTACATCTGCAACCACAGGAAAAGTACAGGAAACT 110	ò		
110	qq	TACTTCATAAACAGGGAATATCATGTACATATCTGCAACCCACAGGAAAAGTACAGAACT	
1397 GCACTCTTACGATTATTTCCTCTTCATGTTCAGGTGCCATTCTGGGGGCTGCATTCAC 118 rAShThrieSerAshGlualaileMetThrileAspThrGluMetMetValGlyProal :::	ò	ValProPheTyrGlyGlyAlaPheTh	
118 rAsnThrIleSerAsnGluAlaIleMetThrIleAspThrGluMetWelGlyProAl	QQ	GCACTCTTACGATTATTTTCCTCTTCATGTTCAGGTGCCATTCTGCGGGGCTGCATTCAC	
	ò	rAsnThr11eSerAsnGluAla11eMetThr11eAspThrGluMetMetValGlyProAl	

AATGCAACGATCATGACATACAGAGATGATGGTGGGGGCTGC 1516 MetGlnGluargalaalalyeValmetargTyrargGluiyeargLy 158 |||||||||||| |atgcaggagagagagagagagatacaggaacagagaaa 1576

23, 2006, 11:58:28

Sequence 586552, Sequence 13269, A Sequence 22, Appl Sequence 112, App

Sequence 115, App Sequence 30, Appl Sequence 48799, A

Sequence 48800, A Sequence 48801, A Sequence 48802, A

Sequence 27313, A Sequence 27313, A Sequence 3235, Ap

OM protein

.. 0

Sequence:

```
Sequence 62, Application US/11121086
Publication No. US20050266459A1
SEGRERAL INFORMATION:
APPLICANT: INFORMATION:
APPLICANT: NIELSEN, TIM S.
APPLICANT: NIELSEN, KIRSTEN V.
APPLICANT: NIELSEN, KIRSTEN V.
APPLICANT: NIELSEN, KIRSTEN V.
APPLICANT: ON INVERSEN US.
FILE REPERBNCE: 09138.6000-00000
CURRENT APPLICATION NUMBER: US/11/121,086
PRIOR APPLICATION NUMBER: 60/567,570
PRIOR FILING DATE: 2004-05-04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              200628
21
21
5
5
19
0
                           US-11-136-527-3235

US-00-925-665A-586552

US-10-925-665A-586552

US-11-121-086-22

US-11-120-925-655A-48801

US-09-925-665A-48801

US-09-925-665A-48801

US-09-925-665A-48801

US-09-925-665A-48801

US-09-925-665A-48801

US-09-925-665A-48801

US-09-925-665A-488118

US-11-124-367A-26636

US-09-925-665A-88251

US-10-925-665A-88251

US-10-925-665A-88251

US-10-925-665A-88251

US-09-925-665A-88251

US-09-925-665A-88251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-925-065A-408177
US-10-821-234-839
US-09-925-065A-213874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-714-887-349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-11-136-619-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-055-877-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQ ID NOS: 107
SOFTWARE: PatentIn version 3.3
SEQ ID NO 62
 1.57
130.00
57.8%
46.7%
12.4%
                                                                                                                   990
162013
1864
                                                                                                                                                                                                                                             558
201
1088
70513
628
93112
201
959
959
959
958
958
958
3457
3457
772
772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score:
Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10.7
10.7
10.7
122.1
122.1
122.0
121.9
121.9
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
121.5
                                                                                                                                                                                                                                                                                                                                    10.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 200628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-11-121-086-62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-11-121-086-62
126.5
125.5
125.5
125.5
125.5
125.5
120
120
120
120
120
                                                                                                                                                                                                                                                                                                                   116.5
116.5
116.5
115.5
115.5
114.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            113.5
112.5
112.5
112.5
112.5
112.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      112
111.5
111.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               113.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 1
Sequence 62, Appl
Sequence 3891, Ap
Sequence 7342, Ap
Sequence 3246, Ap
                                                                                                                  February 23, 2006, 11:41:24 ; Search time 1488 Seconds (without alignments) 267.979 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                        1048
1 MSMSCGLCGANNCPRLMVSP......YESRKAYAELRPRVNGRFVK 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5.1.7
Biocceleration Ltd.
                                                                                    using frame_plus_p2n model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-11-121-086-62
US-11-136-527-3891
US-11-136-527-7342
US-11-136-527-3246
                                                                                                                                                                                                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                      7209121 segs, 1066183437 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Published Applications NA New:*
                GenCore version
Copyright (c) 1993 - 2006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                  0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'YGAPOP=10 -YGAPEXT=0.5 -DELOP=6 -DELEXT=7
                                                                                                                                                                                                                                                                                                                 , Fgapext
, Delext
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ΩI
                                                                                                                                                                                                                                                                                                                                                                                                                                            seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1222
                                                                                                                                                                                         US-10-723-947-77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Match Length DB
                                                                                                                                                                                                                                                                                                    - -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12.4 200628
12.3 .7764
12.1 600
12.1 1428
                                                                                                                                                                                                                                                                              Xgapop 10.0 ,
Ygapop 10.0 ,
Fgapop 6.0 ,
Delop 6.0 ,
                                                                                    nucleic search,
                                                                                                                                                                                                                                                              BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 130
128.5
126.5
126.5
                                                                                                                                                                                         Title:
Perfect score:
                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score
```

Database :

Result Š.

Minimum DB Maximum DB

Searched:

Sequence 5731, Ap-Sequence 88250, A Sequence 88311, A Sequence 433631, Sequence 50627, A Sequence 50627, A Sequence 119552, Sequence 934808, Sequence 688310,

Sequence 6342, Ap Sequence 5246, Ap Sequence 56, Appl Sequence 55, Appl Sequence 408177,

Sequence 3, Appli Sequence 349, App Sequence 29, Appl Sequence 2131, Ap

Sequence 839, App Sequence 213874,

Sequence 10, Appl Sequence 48118, Sequence 26036, A Sequence 69151, A Sequence 640012, Sequence 640012,

```
Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -11-136-527-3246/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  335 G 335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Wyeth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     70 후 70
                                                                                                                                                                                                                                                                           Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Alignment Scores:
                                                                                                                                                                                                           TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA ORGANISM:
                                                                                                                                                                                                                                                                                                                                                          Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No.:
                                                                                                                                                                                                                                                                                            ..
8
                                                                                                                                                                                                                                                                                                             Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                         ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                ----cccacccccccccc 3396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                --ACG 3501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                82 AsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHisLeuVal 101.
                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ------GlnLeuCysGluTyrGlnPhePheAlaHisGly 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                63 AsnPheAspHisArg---ArgThrTrpThrArgProPheHisGluThrAlaAlaAlaGly 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CysProArgLeuMetValSerProIleHisHisHisHisHisHisGlnGluHis--- 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                43 AsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProProAsp
                              22 HisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAlaHis
                                                                                            42 GlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro
                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: Probe Arrays For Expression Profiling of Rat Genes FILE REFERENCE: 031896-041000 (AM101086)
CURRENT APPLICATION NUMBER: US/11/136,527
CURRENT FILING DATE: 2005-05-25
PRIOR APPLICATION NUMBER: US 60/574,294
PRIOR FILING DATE: 2005-05-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3502 gaacceccáccedereccecricácaesesaccasereccececes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GlnProPro---AlaArgAlaHisIleValProPheTyrGlyGly 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3457 GTAGTAGCGGCCGACAGCAAGGAGGCAGGCCGGGCTGGGGAC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7764
36
11
47
21
US-10-723-947-77 (1-187) x US-11-121-086-62 (1-200628)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-723-947-77 (1-187) x US-11-136-527-3891 (1-7764)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels:
                                                                                                                                                                                                                                                     Sequence 3891, Application US/11136527
Publication No. US20050287570A1
GENERAL INFERMATION:
APPLICANT: Wyeth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 3
US-11-136-527-7342/c
; Sequence 7342, Application US/11136527
                                                                                                                                                                                        129431 CATCATCACCACCAC 129445
                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQ ID NOS: 362830
SOFTWARE: PatentIn version 3.2
SEQ ID NO 3891
                                                                                                                                                                                                                                                                                                                        APPLICANT: Mounts, William M
                                                                                                                                                            62 AspAsnPheAspHis 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0.067
128.50
40.9%
31.3%
12.3%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
ORGANISM: Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
                                                                                                                                                                                                                       RESULT 2
US-11-136-527-3891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-11-136-527-3891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alignment Scores:
Pred: No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH:
                                                     . g
                                                                                            ઠે
                                                                                                                         셤
                                                                                                                                                         ઠે
                                                                                                                                                                                        요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
```

```
----ACACACATACATCATCATCATCAGCATCATCAGCAT 456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11 AsnAsnCysProArgLeuMetValSerProlleHisHisHisHisHisHisHisGlnGlu 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             31 HisGlnLeuCysGluTyrGlnPhePheAlaHisGlyAsnHisHisHisHisHisHisGly 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     51 Serala-AlaAspTyrProValProProProProAspAsnPheAspHisArgArgThrTr
APPLICANT: Mounts, william M
TITLE OF INVENTION: Probe Arrays For Expression Profiling of Rat Genes
TITLE OF INVENTION: Probe Arrays For Expression Profiling of Rat Genes
FILE REFERENCE: 031896-041000 (AM101086)
CURRENT APPLICATION NUMBER: US/11/136,527
PRIOR APPLICATION NUMBER: US/11/136,527
PRIOR PAPLICATION NUMBER: US/11/136,527
PRIOR FILING DATE: 2005-05-26
NUMBER OF SEQ ID NOS: 362830
SOFTWARE: Patentin Version 3.2
LENGTH: 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ys For Expression Profiling of Rat Genes (AM101086)
                                                                                                                                                                                                                                                                                                                                    600
25
6
4
6
1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                    Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-723-947-77 (1-187) x US-11-136-527-7342 (1-600)
                                                                                                                                                                                                                                                                                                                                                                                                                        Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Mounts, William M
TITLE OF INVENTION: Probe Arrays For Expr.
FILE REFERENCE: 031895-041000 (AMI01086)
CURRENT APPLICATION NUMBER: US/11/136,527
CURRENT FILING DATE: 2005-05-25
PRIOR APPLICATION NUMBER: US 60/574,294
PRIOR FILING DATE: 2005-05-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 3246, Application US/11136527 Publication No. US20050287570A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQ ID NOS: 362830
SOFTWARE: Patentin version 3.2
SEQ ID NO 3246
LENGTH: 1428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    500 CACAATTGC------
                                                                                                                                                                                                                                              , ORGANISM: Rattus norvegicus US-11-136-527-7342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; ORGANISM: Rattus norvegicus
US-11-136-527-3246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    126.50
50.8%
41.0%
12.1%
                                                                                                                                                                                                                                                                                                                                    0.0067
126.50
50.8%
41.0%
```

요 ò ò g

```
2114 CCATCATCACCGTTATTA------GCATCACATCATCATCATCTGTGACCAC 2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2162 CATCACCACCACCATCACCACCACCATCGTCACCACCACCACCGCGTTTGCACAAGCCA 2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -LeuValGlnProProAlaArgAlaHisIleVal 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22 HighighighighighighigGludigGluLeuCygGluTyrGlnPhePheAlaHig 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      62 AspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAlaAlaGly 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2031 GACCACCATCACCACCATCATCACA-TCA------CCATCCCCACCATCACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           42 GlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Wyeth
APPLICANT: Mounts, William M
ITLE OF INVENTION: Probe Arrays For Expression Profiling of Rat Genes
                                                                                                                                                                                                                                                                                                                             APPLICANT: HOLM, Tom
APPLICANT: HOLM, Tom
APPLICANT: BAITE, Stephen
APPLICANT: FANTIN, Dennis
TITLE OF INVENTION: WETHOOS AND SYSTEMS FOR INFERRING BOVINE TRAITS
FILE REFERENCE: MAILLOO-1
CURRENT APPLICATION NUMBER: US/10/750,623
PRIOR APPLICATION NUMBER: US 60/437,482
PRIOR PILING DATE: 2003-12-31
PRIOR FILING DATE: 202-12-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   82 AsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHis---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-723-947-77 (1-187) x US-10-750-623-27313 (1-7402)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length:
                                                                                                                                                                  Sequence 27313, Application US/10750623
Publication No. US20050287531A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 3235, Application US/11136527
Publication No. US20050287570A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM: Bovine 19866880890824
US-10-750-623-27313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQ ID NOS: 64922
SOFWARE: Patentin version 3.1
SEQ ID NO 27313
LENGTH: 7402
                                                                                                                                                                                                                                    APPLICANT: MMI GENOMICS, INC.
APPLICANT: DENISE, Sue K.
APPLICANT: KERR, Richard
APPLICANT: ROSENFELD, David
                                                        2222 CCGTGGTGTGGC 2233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2078 TCA-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2222 CCGTGGTGTGGC 2233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1.099
126.50
37.5%
33.7%
12.1%
                             ProPheTyrGly 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           111 ProPheTyrGly 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                              GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100 -----
                                                                                                                                              US-10-750-623-27313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-11-136-527-3235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Alignment Scores:
                             111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                1223 CAAGCTGCTCCATATCCTCAGACCCAGCTCAGAGGGTTTTAACACTGGTTGAGCTG 1164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |||
|---GCATCACATCATCTCTATCATGACCAC 2161
                                                                                                                                                                       70,
                                                                                             --- ACACACATACATCATCATCACCATCATCACCAT 1284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2162 CATCACCACCACCATCACCACCACCAATCGTCACCACCAACCGCGCTGTTGCACAAGGCA 2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ---LeuValGlnProProAlaArgAlaHisIleVal 110
                                                                                                                                         31 HisGlnLeuCysGluTyrGlnPhePheAlaHisGlyAsnHisHisHisHisHisGly 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                 11 AsnAsnCysProArgLeuMetValSerProIleHisHisHisHisHisHisHisGlnGlu 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62 AspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAlaAlaGly 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAlaHis 41
                                                                                                                                                                                                                                       SerAla-AlaAspTyrProValProProProProAspAsnPheAspHisArgAhrTr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    42 GlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               82 AsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHis-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: ROSENFELD, David
APPLICANT: HOLM, Tom
APPLICANT: BATES, Stephen
APPLICANT: BATES, Stephen
TITLE OF INVENTIN, Dennis
FILE OF INVENTION: COMPOSITIONS FOR INFERRING BOVINE TRAITS
FILE REFERENCE: MMILION-2
CURRENT APPLICATION NUMBER: US/10/750,185
CURRENT FILING DATE: 2003-12-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-723-947-77 (1-187) x US-10-750-185-27313 (1-7402)
US-10-723-947-77 (1-187) x US-11-136-527-3246 (1-1428)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION NUMBER: US 60/437,482
PRIOR FILING DATE: 2002-12-31
NUMBER OF SEQ ID NOS: 64922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 27313, Application US/10750185 Publication No. US20050260603A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19866880890824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: PatentIN version 3.1
SEQ ID NO 27313
LENGTH: 7402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2114 CCATCATCACCGTTATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: MMI GENOMICS, INC.
APPLICANT: DENISE, Sue K.
APPLICANT: KERR, Richard
APPLICANT: ROSENFELD, David
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0.099
126.50
37.5%
33.7%
                                                                            CACAATTGC-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Bovine
                                                                                                                                                                                                                                                                                                                                                                           1163 G 1163
                                                                                                                                                                                                                                                                                                                                                                                                                                                     -10-750-185-27313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-750-185-27313
                                                                                                                                                                                                                                                                                                                               70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alignment Scores:
                                                                                                                                                                                                                                                                                                                                  Ωr
                                                                                                                                                                                                                                    51
                                                                                                                                                                                                                                                                                                                             70
                                                                                             1328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . No. :
```

ò 요

g ò

음

ò

요

ઠે

ò

2077

61

```
553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               53.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              554 -----TCCAGCGCTGCCAGTCCGGCGCAACAGCTGCCCACTAGTCACCGGGGCCG 604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     94 GlyGlnHisMetAlaHisLeuValGlnProProAlaArgAlaHisIleValProPheTyr 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             505 GGACCGCAC------GCGGCAGCCGCGGCGACGCTGCGGGCAGC 643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      114 GlyGlyAlaPheThrAsnThrIleSerAsnGluAlaIleMetThrIleAspThrGluMet 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    134 MetValGlyProAlaHisTyrProThrMetGlnGluArgAlaAlaLysValMetArgTyr 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             485 ACTCACGATGAGCTGGGCCCGCACGCTCCCCCATCACCATCACCAAGCATCA 544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----GTGATCCGCCTG 751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      --Prolle 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                154 ArgGluLysArg-----LysArgArgArgTyrAspLysGlnIleArgTyrGlu 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     54 AspTyrProValProProProAspAsnPheAspHisArgArgThrTrpThrArgPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   37 ------GlnPhePheAlaHisGlyAsnHisHisHisHisHisHisGlySerAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     74 PheHisGluThrAlaAlaAlaGlyAsnSerSerArgLeuThrLeuGluValGlyAlaGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 586552, Application US/09925065A
Publication No. US20040181048A1
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Wang, David G.
TITLE OF INVENTION: Identification and Mapping of Single
TITLE OF INVENTION: Nucleotide Polymorphisms in the Human Genome
FILE REFERENCE: 108627.135
CURRENT APPLICATION NUMBER: US/09/925,065A
PRIOR PILING DATE: 2001-08-08
PRIOR FILING DATE: 2001-024
PRIOR APPLICATION NUMBER: US 60/243,096
PRIOR APPLICATION NUMBER: US 60/252,147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyr
                                                                                                                                                                                                                                                                                            1962
43
25
64
47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LeuCysGlyAlaAsnAsnCysProArgLeuMetValSer--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-723-947-77 (1-187) x US-11-136-527-3235 (1-1962)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             704 CTGAACCGCCACCTGCGGGGCTTCACCAAGGACGAG
; FILE REFERENCE: 031896-041000 (AM101086); CURRENT APPLICATION NUMBER: US/11/136,527; CURRENT FILING DATE: 2005-05-25; PRIOR APPLICATION NUMBER: US 60/574,294; PRIOR FILING DATE: 2005-05-26; NUMBER OF SEQ ID NOS: 362830; SOFTWARE: PatentIn version 3.2; SEQ ID NO 3235; LENTH: 1962
                                                                                                                                                                                                                                                                                                                                                                                                      Gaps:
                                                                                                                                                                                                                                                                                        0.0298
125.50
38.0%
24.0%
12.0%
                                                                                                                                                                                                            ; ORGANISM: Rattus norvegicus
US-11-136-527-3235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-925-065A-586552/c
                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                           Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22
                                                                                                                                                                                             TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                545
                                                                                                                                                                                                                                                                                                                      Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            а
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

```
APPLICANT: CARGILL, Michele et al.

TITLE OF INVENTION: GENETIC POLYNORPHISMS ASSOCIATED WITH

TITLE OF INVENTION: CARDIOVASCULAR DISORDERS AND DRUG RESPONSE, METHODS OF

TITLE OF INVENTION: DETECTION AND USES THEREOF

FILE REFERENCE: CL001559

CURRENT APPLICATION WUMBER: US/10/995,561

CURRENT FILING DATE: 2004-11-24

NUMBER OF SEQ ID NOS: 85702

SOFTWARE: FASTERO for Windows Version 4.0

SEQ ID NO 13269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       42 GlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProProProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22 HisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAlaHis
                                                                                                                                                                                                                                                                                                                                                                    75,
                                                                                                                                                                                                                                     16, 17,
31,
45,
59,
                                                                                                                                                                                                                                                                                                                                                                    74,
89,
                                                                                                                                                                                                                                       13, 14, 15, 1, 28, 29, 30, 42, 43, 44, 56, 57, 58,
                                                                                                                                                                                                                                                                                                                                                                    72, 73,
87, 88,
                                                                                                                                                                                                                                                                                                                                                                    71,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              507
20
5
111
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-723-947-77 (1-187) x US-09-925-065A-586552 (1-507)
                                                                                                                                                                                                                                       8, 9, 10, 11, 12, 13
(3, 24, 25, 26, 27, 2
(7, 38, 39, 40, 41, 4
(1, 52, 53, 54, 55, 5
                                                                                                                                                                                                                                                                                                                                                                   70,
85,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                    68, 69, '83, 84, '
PRIOR FILING DATE: 2000-11-20
PRIOR APPLICATION WUMBER: US 60/250,092
PRIOR FILING DATE: 2000-11-30
PRIOR APPLICATION NUMBER: US 60/261,766
PRIOR FILING DATE: 2001-01-16
PRIOR FILING DATE: 2001-01-16
PRIOR FILING DATE: 2001-05-09
NUMBER OF SEQ ID NOS: 957086
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 586552
LENGTH: 507
                                                                                                                                                                                                                                                                                                                                                                    67,
82,
96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 13269, Application US/10995561
Publication No. US20050272054A1
                                                                                                                                                                                                                                                                                                                                      1, 2, 3, 4, 5, 6, 7, 8, 18, 19, 20, 21, 22, 23, 32, 33, 34, 35, 36, 37, 46, 47, 48, 49, 50, 51,
                                                                                                                                                                                                                                                                                                    LOCATION: 60
OTHER INFORMATION: n = A,T,C or G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0.00779
125.00
62.5%
50.0%
11.9%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      37.48
27.88
11.98
                                                                                                                                                                           TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                 ) OTHER INFORMATION: n
US-09-925-065A-586552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-995-561-13269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-995-561-13269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA
ORGANISM: Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Alignment Scores
                                                                                                                                                                                                                        NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                       LOCATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score:
```

```
TITLE OF INVENTION: NUCLEOTIDE SEQUENCES AND POLYPEPTIDES ENCODED THEREBY USEFUL FOI TITLE OF INVENTION: MODIFYING PLANT CHARACTERISTICS
FILE REFERENCE: 2750-1585PUS2
CURRENT APPLICATION NUMBER: US/11/010,239
FRIGHT APPLICATION NUMBER: US/01-12-09
FRIGHT APPLICATION NUMBER: US 60/529,352
PRIOR FILING DATE: 2003-12-12
                                                                                                                                                                      57759 CGCTGTGACTGACCCCATCCTCACTGTCATCAGCACTGTCATAGTACCATGCTGACA 57700
57860 CAGTAACACCACCTCCATCACTACCTCCATCGCCACCAC-CATCACCATCACTATCAC-- 57804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1207 ATTCGATACCAAGTTCGCAAACTCAATGCTGATCAACGTCCTCGAATGAAGGGACGATTC 1266
                                            100 uValGlnProProAlaArgAlaHisIleValProPheTyrGlyGlyAlaPheThrAsnTh 120
                                                                                                                                    120 rIleSerAsnGluAlaileMetThrileAspThrGluMetMetValGlyPro-AlaHisT 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          146 ArgAlaAlaLysValMetArgTyrArgGluLysArgLysArgArgArgTyrAspLysGln 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       166 ileArgTyrGluSerArgLysAlaTyrAlaGluLeuArgProArgValAsnGlyArgPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-723-947-77 (1-187) x US-11-010-239-112 (1-1544)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; OTHER INFORMATION: 12600234_construct_ID_YP0279
US-11-010-239-112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
                                                                                                                                                                                                                                                                           57699 AGCCCACAGTGGGTTTGAGGGCTGCC 57674
                                                                                                                                                                                                                               140 yrProThrMetGlnGluArgAlaAla 148
                                                                                                                                                                                                                                                                                                                                                                   Sequence 112, Application US/11010239
Publication No. US20060015970A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; Sequence 115, Application US/10714887; Publication No. US20060015972A1
                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: ROGER PENNELL
APPLICANT: Jack OKAMURO
APPLICANT: Richard SCHNEEBERGER
APPLICANT: Yiven FANG
APPLICANT: Shing KWOK
APPLICANT: Diane JOFUKU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA
ORGANISM: Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQ ID NOS: 133
SOFTWARE: Patentin version 3.3
SEQ ID NO 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Edward A. KIEGLE
Jonathan DONSON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0.0321
124.00
76.2%
54.8%
11.8%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nestor APUYA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: misc feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |||:::
1267 GTGAGA 1272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 186 ValLys 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                  -11-010-239-112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-714-887-115
                                                                                        57803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match:
                                                                                     셤
                                            8
                                                                                                                   53617 TATGATTACCACCACCATTAGCATTATCATTACCACCACCACCAGTACCATCACCAC
                                                                                                                                                                                                                                                                                                        53797 CACCATTCCACCACTGCCACCACCACCACCATCACTATCATTAACAATAGACATCAC 53856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           aGlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHisLe 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                80
                                                                                                                                                                                                                                                                                                                                                                        ---AspHisArgArgThrTrpThrArgProPheHisGlu 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22 HisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAlaHis 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  77 ThralaalaalaalyasnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ---PhePheAlaHisGlyAsnHisHisHisHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----TICCAC---ACCACCACGC
                                                                                                                                                                                                                                                                        49 HisGlySerAlaAlaAsp----TyrProValProProProProAspAsnPhe----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GlyAsnHisHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProPro---Pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 Pro-AspAsnPheAspHisArgArgThrTrpThrArgProPheHisGluThrAlaAlaAl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 22, Application US/11121086
Publication No. US20050266459A1
GENERAL INFORMATION:
APPLICANT: POULSEN, TIM S.
APPLICANT: POILSEN, KIRSTEN V.
TITLE OF INVENTION: NUCLEIC ACID PROBES AND NUCLEIC ACID ANALOG PROBES FILE REFERENCE: 09138.6000-000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            53857 ATAACCAGTricraGCTGGACCTTGAGCCC-----AGAGCCCAC 53895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -- ValGlnProProAlaArgAlaHis 108
                                                                                   HisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGln-
                                    US-10-723-947-77 (1-187) x US-10-995-561-13269 (1-63693)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-723-947-77 (1-187) x US-11-121-086-22 (1-114801)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        57994 CACCACCACCACCATCACCATGATCACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION NUMBER: US/11/121,086 CURRENT FILING DATE: 2005-05-04 PRIOR APPLICATION WHERE: 60/567,570 PRIOR FILING DATE: 2004-05-04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            57902 CCACCATCACCACCCCCATCACCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQ ID NOS: 107
SOFTWARE: PatentIn version 3.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    43.8%
31.5%
11.9%
12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97 MetAlaHisLeu-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: Homo sapiens US-11-121-086-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -086-22/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 114801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQ ID NO 22
                                                                                                                                                                                                                                                                                                                                                                     65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No.:
                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
```

```
Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-11-150-888-30/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-11-150-888-30
67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 13
                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ద
                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; OTHER INFORMATION: G3683 Predicted polypeptide sequence is orthologous to G2999 US-10-714-887-115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              319 GCGCTCCGCTGCTCCGCTGCGGGC-----TGCCACCGCAACTTCCACCGCAAGGAG 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            370 CTCGACGCCGCCGCCCCCGCCGCCGCCACCACCACCAC-------CACCAA 414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----LeuMetValSerProIleHisHisHisHisHisHisHisGlnGluHisGln 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LeuCysGluTyrGlnPhePheAlaHisGlyAsnHisHisHisHisHisGlySerAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ----ProAspAsnPheAspHis-Ar
                                                      APPLICANT: RECRIMANN, JOSE Luis
APPLICANT: CRELMANN, Robert
APPLICANT: CRELMANN, Robert
APPLICANT: CANALES, Noger
APPLICANT: REPETTI, Peter
APPLICANT: REPETTI, Peter
APPLICANT: RUMINOTO, Roderick W
APPLICANT: RUMINOTO, Noal
APPLICANT: PINEDA, Omaira
APPLICANT: PINEDA, Omaira
APPLICANT: PINEDA, Omaira
APPLICANT: PINEDA, PINEDA, CREIRANN, PINEDA, CREIRANN, PINEDA, CREIREAN, PINEDA, CREIRANN, PINEDA, CREIREAN, PINEDA, P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Remaining Prior Application data removed - See File Wrapper or PALM. NUMBER OF SEQ ID NOS: 430 SOFTWARE: PatentIn version 3.2 .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             990
18
71
61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 SerMetSerCysGlyLeuCysGlyAlaAsnAsnCysProArg-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA ORGANISM: Oryza sativa (japonica cultivar-group)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-723-947-77 (1-187) x US-10-714-887-115 (1-990)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION NUMBER: US/10/714,887
CURRENT FILING DATE: 2003-11-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CUKRENT PILLING DATE: 2003-101-13
PRIOR APPLICATION NUMBER: 10/412,699
PRIOR FILING DATE: 2003-04-10
PRIOR FILING DATE: 2000-02-17
PRIOR PELLING DATE: 2000-02-17
PRIOR APPLICATION NUMBER: 60/135,134
PRIOR APPLICATION NUMBER: 69/394,519
PRIOR FILING DATE: 1999-09-13
PRIOR FILING DATE: 1999-09-13
PRIOR FILING DATE: 2000-03-22
PRIOR PILLING DATE: 2000-03-22
PRIOR PILLING DATE: 2000-03-22
PRIOR APPLICATION NUMBER: 69/533,029
PRIOR PILLING DATE: 2000-03-22
PRIOR APPLICATION NUMBER: 69/533,030
PRIOR PILLING DATE: 2000-03-22
PRIOR PILLING DATE: 2000-03-22
PRIOR PILLING DATE: 2000-03-22
PRIOR PILLING DATE: 1000-03-22
PRIOR FILLING DATE: 1000-03-22
PRIOR PILLING DATE: 1000-03-23
PRIOR FILLING DATE: 1000-03-23
PRIOR FILLING DATE: 1099-03-23
PRIOR FILLING DATE: 1999-03-33
PRIOR FILLING DATE: 1999-03-33
PRIOR FILLING DATE: 1999-03-33
PRIOR FILLING DATE: 1999-03-33
PRIOR FILLING DATE: 2000-11-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           53 AlaAspTyrProValProPro---
   Mendel Biotechnology, Inc
                                    HEARD, Jacqueline
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0.0277
122.50
36.2%
27.5%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQ ID NO 115
LENGTH: 990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           а
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ે
```

```
APPLICANT: Littman, Daniel
TITLE OF INVENTION: Methods and Agents for Maintaining
TITLE OF INVENTION: Muscle Mass and for Preventing Muscle Atrophy and Blomarkers
TITLE OF INVENTION: Muscle Mass and for Preventing Muscle Atrophy and Blomarkers
TITLE OF INVENTION: for Monitoring Same
FILE REFERENCE: 1049-1048N
CURRENT APPLICATION NUMBER: US/11/150,888
CURRENT FILING DATE: 2005-06-10
FRIOR FILING DATE: 2004-06-10
NUMBER OF SEQ ID NOS: 31
SEQ ID NO 30
LENGTH: 162013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    104880 TACCACGCCATCACCACCATCACCATCACCATTGCCATTATCACTACCACCACCAT 104821
                            114
                                                                                                                                                                                                                                                  684
                                                                                                                                                                                                                                                                                                                              cerceaccercececed 789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                154 rgGluLysArgLysArgArgArgTyrAspLysGlnIleArgTyrGluSerArgLysAlaT 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----cececece 822
                                                                                                   81 -GlyAsnSerSerArgLeuThrLeuGluValGlyAlaGlyGlyGlnHisMetAlaHisLe 100
                                                                                                                                                                                                                                                                                                    114 yGlyAlaPheThrAsnThrIleSerAsnGluAlaIle-MetThrIleAspThrGluMetM 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                535 ------COGAGGAGGTCGCGTGGCGCTGCAGAAGCTGGAGGACGCCCGTCGTGCAG
                                                                                                                                                                                              100 uValGlnProPro------AlaArgAlaHisIleValProPheTyrGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ----LeuCysGluTyrGlnPhePheAlaHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GlyasnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro
                                                                                                                                                                                                                                                                                                                                                                                                  134 etValGlyProAlaHisTyrProThrMetGlnGluArgAlaAlaLysValMetArgTyrA
                                                                                                                                               s89 cecaccaácricaceceaecacaaacecececarecresécrice--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20 ProlleHisHisHisHisHisHisGlnGluHisGln----
gArgThrTrpThrArgProPheHisGluThrAlaAlaAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-723-947-77 (1-187) x US-11-150-888-30 (1-162013)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    790 GCCGCCGGAGACGACGACGACGA---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 30, Application US/11150888 Publication No. US20060003959A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                 745 AAGCACACCCTCGCCCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     174 yrAlaGluLeuArgPro 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  823 ccéccecacccéacce 839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            122.00
43.5%
35.5%
11.6%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Burden, Steven
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA ORGANISM: Homo sapiens
```

```
ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    đ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAlaHis 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GlyAsnHisHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProProPro
                                                                                                               Sequence 48799, Application US/09925065A

Publication No. US20040181048A1

GENERAL INPORMATION:

APPLICANT: Wang, David G.

TITLE OF INVENTION: Identification and Mapping of Single

TITLE OF INVENTION: Identification and Mapping of Single

TITLE OF INVENTION: Identification and Mapping of Single

FILE REFERENCE: 108827.135

CURRENT APPLICATION NUMBER: US/09/925,065A

CURRENT FILING DATE: 2001-08-08

PRIOR FILING DATE: 2000-11-20

PRIOR FILING DATE: 2000-11-20

PRIOR FILING DATE: 2000-11-30

PRIOR FILING DATE: 2001-11-6

PRIOR FILING DATE: 2001-01-16

PRIOR FILING DATE: 2001-01-05-09

NUMBER OF SEQ ID NOS: 957086

SOFTWARE: FREESEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    62 AspAsnPheAspHisArgArgThrTrpThrArgProPheHisGlu-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1707 caccarcacercarcarcarcarcarcargaecarrecercarcerrac---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-925-065A-48800/c
; Sequence 48800, Application US/09925065A
; Publication No. US20040181048A1
; GENERAL INFORMATION:
; APPLICATY: Wang, David G.
; TITLE OF INVENTION: Identification and Mapping of Single
; TITLE OF INVENTION: Nucleotide Polymorphisms in the Human Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1563 recacaacreragrareaaacaeacrrerragrerre 1525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   77 ---ThrAlaAlaAlaGlyAsnSerSerArgLeuThrLeu 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-723-947-77 (1-187) x US-09-925-065A-48799 (1-1864)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILE REFERENCE: 108827.135
CURRENT APPLICATION NUMBER: US/09/925,065A
CURRENT FILING DATE: 2001-08-08
PRIOR APPLICATION NUMBER: US 60/243,096
PRIOR FILING DATE: 2000-10-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0.0948
120.00
42.5%
34.2%
11.5%
                          :::
104761 TCATCA 104756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA
ORGANISM: Homo gapiens
62 AspAsn 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                    US-09-925-065A-48799/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-925-065A-48799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQ ID NO 48799
LENGTH: 1864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 15
                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
ઠે
```

```
1707 CACCATCACCGTCATCATCATCATCATGACCATTGCCATCATCCTCATTAC---- 1654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1653 cacgarcarcaccaccarcarcardec-----carcaccaccaccrccrccrcrr 1603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22 HisHisHisHisHisHisHisGlnGluHisGlnLeuCysGluTyrGlnPhePheAlaHis 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   42 GlyAsnHisHisHisHisHisHisGlySerAlaAlaAspTyrProValProProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            62 AspAsnPheAspHisArgArgThrTrpThrArgProPheHisGlu-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1563 TGCACAACTCTAGTATCAAACACAACTTCTTTAGTGTTG 1525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          77 --- ThralaAlaAlaGlyAsnSerSerArgLeuThrLeu 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-723-947-77 (1-187) x US-09-925-065A-48800 (1-1864)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
Matches:
Conservative:
Mismatches:
Indels:
PRIOR APPLICATION NUMBER: US 60/252,147
PRIOR FILING DATE: 2000-11-20
PRIOR PELING DATE: 2000-11-30
PRIOR PILING DATE: 2000-11-30
PRIOR PILING DATE: 2000-11-16
PRIOR APPLICATION NUMBER: US 60/261,766
PRIOR PRIOR DATE: 2001-01-16
PRIOR APPLICATION NUMBER: US 60/289,846
PRIOR PILING DATE: 2001-06-09
PRIOR PILING DATE: 2001-06-09
PRIOR PILING DATE: 2001-06-09
PRIOR FILING DATE: 2001-06-09
PRIOR FILING DATE: 2001-06-09
PRIOR FILING DATE: 2001-06-09
PRIOR FILING DATE: 2001-06-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0.0948
120.00
42.5%
34.2%
11.5%
                                                                                                                                                                                                                                                                                                                                       TYPE: DNA
CORGANISM: Homo sapiens
US-09-925-065A-48800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                SEQ ID NO 48800
LENGTH: 1864
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No.:
```

Search completed: February 23, 2006, 12:07:53 Job time : 1579 secs

This Page is Inserted by IFW Indexing and Scanning Operations and is not part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

BLACK BORDERS

G BLACK BORDERS	
IMAGE CUT OFF AT TOP, BOTTOM OR SIDES	
☐ FADED TEXT OR DRAWING	
☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING	
☐ SKEWED/SLANTED IMAGES	
☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS	
☐ GRAY SCALE DOCUMENTS	
☐ LINES OR MARKS ON ORIGINAL DOCUMENT	
REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY	
OTHER:	<i>,</i>

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.